DOCUMENT RESUME

ED 268 466 CG 019 025

AUTHOR Hotchkiss, Lawrence; Dorsten, Linda Eberst
TITLE Attitudes, Behavior, and Employability.
INSTITUTION Ohio State Univ., Columbus. National Center for Research in Vocational Education.
SPONS AGENCY National Inst. of Education (ED), Washington, DC.
PUB DATE 85
GRANT NIE-G-83-0005-P-1
NOTE 129p.; Some pages may be marginally legible due to small print.
PUB TYPE Reports - Research/Technical (143)

EDRS PRICE MF01/PC06 Plus Postage.
DESCRIPTORS Adolescents; Career Guidance; Dropouts; *Employment Potential; High Schools; *High School Students; Institutional Characteristics; *School Guidance; Self Esteem; *Student Attitudes; *Student Behavior; *Unemployment; Wages; Working Hours

ABSTRACT

This report summarizes the findings of three studies related to the effects of schooling on the employability development of youth. The first two studies described investigate determinants of attitudes and misbehavior in high school that are presumed to affect labor market outcomes later. The third study is presented as a complement to the first two studies and examines the effects of misbehavior in school, attitudinal variables developed while in school, and school characteristics on employment experience after leaving high school. An executive summary and introductory chapter are included. Chapter 2 assesses the effects of an active school guidance program on the development of positive self-esteem, on a sense of agency (internal locus of control), and on the congruence among career aspirations and abilities. Chapter 3 reports a study of factors that account for mild forms of deviance in high school (truancy, tardiness, cutting class, coming to class unprepared, and droppping out of school). The fourth chapter summarizes findings regarding the effects of attitudes, deviance in high school, school services, and staff attitudes on wages, hours at work, and employment after high school. Thirteen tables and eight figures are included throughout the text. (Author/NB)

**********
* Reproductions supplied by EDRS are the best that can be made *
* from the original document. *
**********

ED268466

U.S. DEPARTMENT OF EDUCATION
NATIONAL INSTITUTE OF EDUCATION
EDUCATIONAL RESOURCES INFORMATION
CENTER (ERIC)

✓ This document has been reproduced as received from the person or organization originating it.

☐ Minor changes have been made to improve reproduction quality.

• Points of view or opinions stated in this document do not necessarily represent official NIE position or policy.

# ATTITUDES, BEHAVIOR, AND EMPLOYABILITY

Lawrence Hotchkiss

and

Linda Eberst Dorsten

"PERMISSION TO REPRODUCE THIS MATERIAL HAS BEEN GRANTED BY

L. Pfister

TO THE EDUCATIONAL RESOURCES INFORMATION CENTER (ERIC)."

The National Center for Research in Vocational Education
The Ohio State University
1960 Kenny Road
Columbus, Ohio 43210-1090

1985

CG019025

FUNDING INFORMATION

Project Title: School Effectiveness for Employability

Grant Number: NIE-G-83-0005, P-1

Project Number: 716864

Act Under Which Funds Were Administered: P.L. 96-98

Source of Contract: U.S. Department of Education
National Institute of Education
Washington, DC 20202

Project Officer: Oliver Moles

Contractor: The National Center for Research in Vocational Education
The Ohio State University
Columbus, Ohio 43210-1090

Executive Director: Robert E. Taylor

Disclaimer: This publication was prepared pursuant to a contract with the National Institute of Education, U.S. Department of Education. Contractors undertaking such projects under government sponsorship are encouraged to express freely their judgment in professional and technical matters. Points of view or opinions do not, therefore, necessarily represent official U.S. Department of Education position or policy.

Discrimination Prohibited: Title VI of the Civil Rights Act of 1964 states: "No person in the United States shall, on the ground of race, color, or national origin, be excluded from participation in, be denied the benefits of, or be subjected to discrimination under any program or activity receiving federal financial assistance." Title IX of the Education Amendments of 1972 states: "No person in the United States shall, on the basis of sex, be excluded from participation in, be denied the benefits of, or be subjected to discrimination under any education program or activity receiving Federal financial assistance." Therefore, the Research Program on Employability, like every program or activity receiving financial assistance from the U.S. Department of Education, must be operated in compliance with these laws.

TABLE OF CONTENTS

LIST OF TABLES . . . . . iv

LIST OF FIGURES . . . . . v

FOREWORD . . . . . vi

EXECUTIVE SUMMARY . . . . . viii

CHAPTER 1
INTRODUCTION . . . . . 1

CHAPTER 2
OUTCOMES OF CAREER GUIDANCE AND COUNSELING IN HIGH SCHOOL
by Lawrence Hotchkiss and Linda Eberst Dorsten . . . . . 3

CHAPTER 3
DEVIANCE IN HIGH SCHOOL
by Lawrence Hotchkiss and Linda Eberst Dorsten . . . . . 33

CHAPTER 4
POST-HIGH SCHOOL LABOR MARKET OUTCOMES AND SCHOOLING
by Lawrence Hotchkiss . . . . . 91

LIST OF TABLES


Table

2.1 HYPOTHESES . . . . . 13

2.2 EFFECTS OF GUIDANCE ON LOCUS OF CONTROL AND SELF-ESTEEM . . . . . 22

2.3 INTERACTION MODELS . . . . . 23

3.1 TOTAL EFFECTS OF EXOGENOUS VARIABLES . . . . . 68

3.2 EFFECTS OF SCHOOL VARIABLES: EXCLUDING SUPPLEMENTAL SURVEY DATA . . . . . 71

3.3 EFFECTS OF SCHOOL VARIABLES: INCLUDING SUPPLEMENTAL SURVEY DATA . . . . . 73

3.4 FEEDBACK EFFECTS OF ENDOGENOUS VARIABLES . . . . . 76

3.5 FEEDBACK EFFECTS AMONG ENDOGENOUS VARIABLES: TRIMMED MODEL . . . . . 82

4.1 EFFECTS OF SCHOOL DEPORTMENT AND ATTITUDES ON EMPLOYMENT OUTCOMES . . . . . 101

4.2 EFFECTS OF SCHOOL DEPORTMENT AND ATTITUDES ON EMPLOYMENT OUTCOMES BY STUDENT STATUS . . . . . 103

4.3 EFFECTS OF SCHOOL DEPORTMENT AND ATTITUDES ON EMPLOYMENT OUTCOMES BY GENDER . . . . . 106

4.4 EFFECTS OF SCHOOL VARIABLES ON EMPLOYMENT OUTCOMES . . . . 108

4.5 EFFECTS OF SCHOOL DEPORTMENT, ATTITUDES, AND SCHOOL VARIABLES ON TIME IN SCHOOL . . . . . 110

LIST OF FIGURES

Figure

3.1 Liska and Reed model of delinquency: whites . . . . . 40

3.2 Liska and Reed model of delinquency: blacks . . . . . 40

3.3 A conceptual schema for dropout from college . . . . . 46

3.4 Schematic view of relationships among primary categories of variables . . . . . 54

3.5 Defference in model of strain hypothesis . . . . . 56

3.6 Psychological stress as an intervening variable in the strain model . . . . . 56

3.7 Parsimonious version of model of deviance in high school . . . . . 82

4.1 Model of the impact of deviance on work experience . . . . 95

# FOREWORD

This report is the last produced as part of a research program at the National Center for Research in Vocational Education, the Ohio State University. This research program is designed to investigate the effects of school characteristics and processes on student employability after leaving school. The approach is to conduct statistical analyses with data from the High School and Beyond (HSB) survey as augmented by a supplemental survey of school staff in a subsample of schools contained in the HSB sample. The supplemental survey was completed under the sponsorship of a consortium of NIE research centers led by the National Center for Research in Vocational Education. The supplemental survey is designed to obtain measurements of school goals and processes that the effective schools literature suggests are important in achieving the elusive goal of effective education. Members of the consortium are the following:

The National Center for Research in Vocational Education
The Ohio State University
Columbus, OH 43210-1090

The Wisconsin Center for Education Research
The University of Wisconsin-Madison
School of Education
Madison, WI 53706

The Institute for Research in Educational Finance and Governance
Stanford University
Stanford, CA 94305

The Center for Educational Policy and Management
The University of Oregon
College of Education
Eugene, OR 97403

The Center for Social Organization of Schools
Johns Hopkins University
Baltimore, MD 21218

This report makes use of the supplemental survey data by (1) merging it with the HSB 1980 sophomore cohort data to study the process of change during the last 2 years of high school, and (2) merging it with the HSB 1980 senior cohort data to investigate the impacts of schooling on post-high school labor market outcomes.

Appreciation is expressed to the authors of this report, Lawrence Hotchkiss, Project Director of the Schooling Effectiveness Study, and Linda Eberst Dorsten, Graduate Research Associate on the study, both from the National Center for Research in Vocational Education. Appreciation for helpful reviews of the document is extended to Henry Borow, Professor of Psychological Studies, the University of Minnesota, Luther B. Otto, Director of Youth Studies, Boys Town, and Linda Lotto, Assistant Director, The National Center for Research in Vocational Education. Thanks also are due to John Bishop, Associate Director of the Research Division at the National Center for helpful

comments and encouragement. A special note of thanks is due to Colleen Kinzelman, Word Processing Specialist, who typed the manuscript. Additionally, appreciation is extended to Rodney Ferryman, who assisted with the computer programming, and to Jeanne Desy and Judy Balogh who provided editorial assistance. Oliver Moles was the NIE project officer on the study. His encouragement and patience are much appreciated.

Robert E. Taylor
Executive Director
The National Center for Research
in Vocational Education

## EXECUTIVE SUMMARY

This document reports findings from three studies related to the employability development of youth during their attendance in high school. The first two studies investigate the influence of schooling on student attitudes and behavior while still in high school, and the last study extends this work by examining the effects of attitudes and behavior measured while youth were in high school on their wage, work hours, and unemployment immediately after leaving high school.

The first study assesses effects of school career guidance programs on outcomes that, it is argued, reflect the central mission of career guidance as expressed in the professional guidance literature. First, it is noted that a fundamental goal of guidance is to inculcate a sense of agency or mastery over one's career. Two outcomes are used to index sense of agency--locus of control and self-esteem. Of the two, locus of control has by far the best face validity as an index of sense of agency or control over one's fate. A variety of measures of the degree to which schools have in place active career guidance programs fails to reveal any substantial influence on either of those two outcomes. There is a slight tendency for larger effect estimates to be associated with self-esteem, but no effects are of substantial magnitude.

It is inferred from critiques of career guidance that guidance programs do not affect students' sense of agency, because the economy does not produce jobs with outlets for personal development in sufficient number that most students would believe they were masters of their occupational fates. The data tend to support the critics on this point. Support for the critics is not strong, however, because the effects of guidance on students' sense of agency is not a central part of their critique.

The second fundamental aspect of guidance philosophy that is addressed in the first study is the notion that career guidance should assist students in developing their career goals and self-precepts in line with the objective evidence available to them. On the basis of this goal it is predicted that youth attending schools with active guidance programs will develop educational expectations, occupational expectations, and perceived ability to complete college that are more closely associated with each other and with objective indicators of ability such as test scores and grades than students attending schools with less active guidance programs. On this point, the goals of guidance come more directly to loggerheads with critics than is the case regarding effects of guidance on youths' sense of agency. The critics charge that, instead, guidance programs reinforce the influence of status characteristics on career goals and perceived college ability. The data do not support either viewpoint. Few statistical interactions of the type predicted from either source are statistically significant, and none are of substantial magnitude.

Many evaluation studies of specific guidance interventions have concluded that those interventions generate the intended consequences. The question, then, is why did the present study find no effects? There are several possible reasons. One is that specific guidance interventions do have the effects reported by evaluation studies, but they are too small, short-lived, and diverse to show up in a study of long-term effects at the school level. Since

the present study examines the effects of attending schools with active vs. inactive guidance programs over a 2-year period, we may not have picked up effects of the type measured by evaluation studies. A second possible reason for the discrepancy is that the outcomes studied here are based on standard measures of career expectations, self-esteem, locus of control, and achievement, whereas outcomes used in evaluation studies tend to be specifically tailored to the type of intervention under study. A third possible reason for the discrepancy is that many evaluation studies may be based on random assignment to treatments and control groups; the present study is based on observational data. A large number of statistical controls are included in this study, however. Finally, participants in evaluation studies may have a special motivation to achieve program goals due to the "Hawthorne" effect, a motivation that is absent in ongoing programs.

The second study examines the effects of a broad range of variables on relatively mild forms of deviance associated with being in high school. Five measures are used as outcomes--truancy, tardiness to school, cutting class, coming to classes unprepared, and dropping out of school. Although theories of deviant behavior are targeted to violations more serious than these, other sources of theorizing on the topic are scarce. Major theories of deviant behavior are therefore used as a basis for specification of the models.

Although the primary goal of this study is not to test theories of deviance, those theories do provide an important organizing framework for the analyses. It is therefore useful to note the implications of the findings for those theories. We find fairly clear support for the effects of peers on deviance, thus implying support for differential association theory. We do not test the detailed psychological specifications of that theory, however. Also, the relatively strong impact of grades on deviance found in this paper suggests some degree of support for "strain" theory--on the assumption that the mechanism accounting for the effects of grades is strain produced by failure to achieve socially prescribed goals (high grades). The version of strain theory proposed by Elliott and his coworkers, defined by effects of the discrepancy between aspiration and achievement, is not supported in these data however.

The picture that emerges from the results is one in which school deviance, at least in the relatively mild forms studied here, is generated by the competitive structure of the grading system and by the reactions of individuals and their peers to it. Once deviant behavior of one type is established it tends to stimulate other types of deviance in a system of mutually reinforcing feedbacks. This pattern of deviance substantially raises the chance of dropping out of school. For instance, the likelihood that a typical male will drop out of school is raised from 9 percent to 13 percent if his absences per semester increase from about 3 to about 7 (from the mean to 1 standard deviation above). Although background and school characteristics exercise some scattered effects on school deviance, it is not possible to extract from the variables explicitly included in the present analysis a clear picture of how schools can influence their students' behavior.

The extent to which it is important to student achievement that students conform to school norms also is unclear. The effects of grades on deviance, for example are substantially stronger than the effects of deviance (except dropping out, of course) on grades. Also, none of the effects of deviance on test score performance is large, and only one is statistically significant.

The third study examines the effects on employment experience in the immediate time periods after leaving high school of deviance in high school, attitudes, and school variables. The deviance variables include truancy, tardiness, cutting class, not receiving a high school diploma, discipline problems in school, suspension from school, and having been in "serious trouble with the law." The attitudinal variables consist of work values, family values, community values, self-esteem, and locus of control, all expected to improve one's early labor market experience on the grounds that adherence to values defined as socially desirable implies a tendency to conform in ways that promote desired labor market outcomes. The school variables are of two types: (1) staff attitudes regarding the goals for the school and student capacities, and (2) services related to employment. The staff attitudes include ranking of the importance of developing basic skills, job skills, and good work habits. This group of variables also includes one item indicating staff belief in the capacity of students to learn. Variables describing school services related to employment include placement services, job information, linkage, teacher release time to visit local employers, and utilization of guidance services.

The findings indicate that deviance during high school has little or no effects on employment experience just after leaving high school. Effect estimates generally are close to zero, but those that are not zero are nearly as likely to imply that high school deviance generates favorable labor market experience as that it generates unfavorable experience. Attitudes have stronger effects than deviance. This result was not anticipated. The two types of observation together imply that (1) deviance may be situation specific, and (2) attitudes tend to be enduring by comparison.

The pattern of the effects of the attitudes is curious, however. Internal locus of control and strong family values lead to favorable labor market outcomes. The effects of family values are stronger for females. Positive self-esteem, however, hinders labor market success, especially for students in postsecondary schools. Work values have almost no effects! The one exception here is that, for males, positive work values reduce the chance of unemployment. Community values generally have little effect, but there is a tendency for a strong sense of community to inhibit success in entry-level jobs. None of the effects of attitudes are strong, however, and many coefficients are not statistically significant.

The lack of effects of school deviance, the small effects of attitudes, and the lack of consistent patterns of effects associated with deviance and with attitudes all suggest that employer emphasis on good attitude and hard work is misplaced. This conclusion probably is not justified, however. First, the low effects of school deviance probably result in part from the inability of employers to use behavioral records as screening devices; it does not mean that deviance on the job has no effect. Secondly, it seems apparent that employers are not able to determine reliably in advance of hiring what attitudes job applicants hold. Therefore, employers cannot screen on attitudes either.

Even if it were possible to screen on attitudes, one would need substantially more evidence than is contained in this paper before deciding to hire

individuals with internal locus of control, low self-esteem, and high family values, and disregarding applicants' work values.

The investigation of the effects of school variables also did not uncover any exceptionally strong effects, but some encouraging results were observed. In particular, availability of job information in the high school, linkage between the school and local employers, and release time given to teachers to contact local employers show some tendencies to foster favorable employment experiences for youth who had attended schools offering these services. These effects are not strong, however, and exhibit a somewhat erratic pattern of sign changes across outcome measures. The strongest effects are for job information. Counseling services do not seem to consistently help youth in the transition from school to work.

The implications of these results for school policy regarding the employability development of students are difficult to assess. Strong emphasis on good deportment and "responsible" attitudes is not supported by the analyses here, though it is difficult to agree on broader grounds that such emphasis is ill-advised. The results do imply that policies designed to provide concrete services such as job information may be helpful, but the statistical results are too weak to engender confidence in this type of policy.

# CHAPTER 1

## INTRODUCTION

This report summarizes the findings of three studies related to the effects of schooling on the employability development of youth. In past research the focus has been on assessing the effects of vocational curriculum and basic skills on employment experience after leaving high school. Typical outcomes assessed in these studies have been wage, hours, employment, and earnings (Ellwood 1982; Grasso and Shea 1979; Meyer 1981; Mertens and Gardner 1981; Rumberger and Daymont 1982; Campbell et al. 1982; Kang and Bishop 1984). In contrast, the present report attends to the role of attitudes and "misbehavior" in developing employability. The first two studies investigate determinants of attitudes and misbehavior in high school that are presumed to affect labor market outcomes later. The third study complements the first two by examining the effects of misbehavior in school, attitudinal variables developed while in school, and school characteristics on employment experience after leaving high school.

The focus in this study is on attitudinal and behavioral components of employability. This stems in part from the fact that this type of research has been neglected in the past and in part from strong opinions registered by employers in surveys that a "good attitude" and "willingness to work hard" are strategic characteristics of successful entry-level workers as well as successfull workers later on (Wilms 1983; Hollenbeck and Smith 1984).

Chapter 2 assesses the effects of an active school guidance program on the development of positive self-esteem, on a sense of agency (internal locus of control), and on the congruence among career aspirations and abilities. Chapter 3 reports a study of factors that account for mild forms of deviance in high school--truancy, tardiness, cutting class, coming to class unprepared, and dropping out of school. The fourth chapter summarizes findings regarding the effects of attitudes (locus of control, self-esteem, work values, family values, and community values), deviance in high school (truancy, tardiness, cutting classes, disciplinary problems in school, suspension, trouble with the law, high school diploma), and school services and staff attitudes (e.g., placement, linkage, and staff goals) on wages, hours at work, and unemployment after high school.

REFERENCES

Campbell, Paul B.; Gardner, John A.; and Seitz, Patricia. "Post Secondary Experience of Students with Varying Participation in Secondary Vocational Education." Columbus: The National Center for Research in Vocational Education, The Ohio State University, 1982.

Ellwood, David T. "Teenage Unemployment: Permanent Scars or Temporary Blemishes?" In The Youth Labor Market Problem: Its Nature, Causes, and Consequences, edited by Richard B. Freeman and David A. Wise, pp. 349-390. Chicago: The University of Chicago Press, 1982.

Grasso, John T., and Shea, John R. Vocational Education and Training: Impact on Youth. Berkeley, CA: Carnegie Council on Policy Studies in Higher Education, 1979.

Hollenbeck, Kevin, and Smith, Bruce. Selecting Young Workers: The Influence of Applicants' Education and Skills on Employability Assessments by Employers. Columbus: The National Center for Research in Vocational Education, The Ohio State University, 1984.

Kang, Suk, and Bishop, John. "Impact of Curriculum on the Non-College Bound Youths' Labor Market Outcomes." In High School Preparation for Employment, pp. 55-94. Columbus: The National Center for Research in Vocational Education, The Ohio State University, 1984.

Mertens, Donna M., and Gardner, John A. Vocational Education and the Younger Adult Worker. Columbus: The National Center for Research in Vocational Education, The Ohio State University, 1981.

Meyer, Robert H. An Economic Analysis of High School Vocational Education: the Labor Market Affects of Vocational Education. Washington, DC: The Urban Institute, 1981.

Rumberger, Russell W., and Daymont, Thomas N. "The Economic Value of Academic and Vocational Training Acquired in High School." Paper presented at the 1982 annual meeting of the American Educational Research Association, New York, March 1982.

Wilms, Wellford W. "The Limited Utility of Vocational Education: California Employers' Views." Public Affairs Report 24 (4) August 1983.

CHAPTER 2

# OUTCOMES OF CAREER GUIDANCE AND COUNSELING IN HIGH SCHOOL

Lawrence Hotchkiss and Linda Eberst Dorsten

## Introduction

This report examines student outcomes of high school career guidance and counseling programs. All outcome variables are defined on individual high school students, but the guidance and counseling "interventions" are defined at the school level. The guidance and counseling program at each school is characterized by the quantity and diversity of services provided. The fundamental question, then, is, Do students who attend schools with active guidance programs more nearly achieve certain educational goals than students who attend other schools?

## Evaluation Studies

To date, assessment of the outcomes of guidance and counseling from empirical research has relied primarily on interventions examining (1) career planning, exploration or information-seeking, most often determined by student self-reported actions taken after exposure to treatment; (2) decision-making or career maturity, assessed by various instruments such as the Career Maturity Inventory (CMI) and the Career Development Inventory (CDI); and (3) a residual category containing various outcomes, such as self-knowledge and appraisal, scholastic achievement, and school attendance. Although many interventions seem to provide at least some beneficial effects (Spokane and Oliver 1983), a variety of interventions often appear to generate similar outcomes, thus suggesting the possibility of Hawthorne effects occurring in some studies. On the other hand, Spokane and Oliver note that frequently it is found that a given treatment has the expected effects on some outcomes but not on others.

Conclusions from studies examining career exploration or information-seeking outcomes for high school students are difficult to compare, primarily because some studies address the issue of treatment by attribute interactions while others do not. For example, some studies conclude that there are no consistent differences between experimental and control groups regarding increased information-seeking (Thoresen, Hosford, and Krumboltz 1970; Davis and Sanborn 1973; Thoresen and Hamilton 1972; Zytowski 1977). Some of these studies report interactions between certain subgroups within the experimental group, however, such as treatment by sex (Krumboltz and Thoresen 1964); treatment by SES of school attended (Thoreson, Hosford, and Krumboltz 1970); and treatment by counselor/school (Krumboltz and Thoresen 1964). Other interactions include treatment by motivation (Borman 1972); treatment by counselor/school differences and type of setting--group or individual (Krumboltz and Thoresen 1964), along with treatment by sex, counselor/school, and setting (Krumboltz and Thoresen 1964). Davis and Sanborn (1973) found main effects of treatment as well as a sex-by-grade level interaction.

Thoresen and Hamilton (1972) found that both peer modeling and modeling plus usage of career materials increased career knowledge, but materials without modeling did not result in significant differences (Thoresen and Hamilton

1972). On career knowledge and use of information, both treatments and their combination were significant. Borman (1972) found no variance between types of treatment (individual counseling-reinforcement, individual exposure to a guidance tape, and control); however, more motivated students responded to the guidance tape while those less motivated responded better to individual counseling. One study utilizing the Vocational Exploration Group (VEG) with ninth grade Mexican-American students reported only significant differences for knowledge of job functions (Bergland and Lundquist 1975). In summary, treatment per se does not seem unequivocally to produce increased career information-seeking as a short-term goal. On the other hand, specific treatments may benefit certain subpopulations of students, e.g., effects may differ by sex, grade level, motivation level, and exposure to reinforcing school- or counselor-specific factors.

A second area of empirical research treats career maturity (attitudes and knowledge about the work world) and decision-making skills as outcomes. No significant differences emerge from Swails and Herr's (1976) study of vocational maturity and decision-making from any of the three treatments (group counseling, counseling using a peer model, and use of a career game). Swails and Herr suggest that these findings indicate the complex nature of both the vocational development process and the career maturity construct. Carey and Weber's (1979) analysis found that participation in an experience-based career program did not increase work attitude maturity. Zytowski's (1977) study measuring certainty of and satisfaction with occupational choice as a result of exposure and exploration of students' career interest profiles showed no significant differences between experimental and control groups; only self-knowledge increased. On the other hand, Brenner and Gazda-Grace (1979) did report that after participation in a decision-making course that emphasized self-knowledge, occupational information acquisition, and career planning the experimental group showed significantly higher gain scores in decision-making ability than did the control group. The experimental group was composed of females, while the control group included both genders, however. Yates, Johnson, and Johnson (1979) found significant gain scores for knowledge and job choices (but not for planning or problem solving) as a result of participation in the Vocational Exploration Program (VEG). Neither of latter two studies examined possible interaction effects such as treatment by sex, however.

Indeed, interaction does play an important part, not only in studies of information seeking, but also in studies of career maturity when the research design takes such a possibility into account. Hanson and Sander (1973) examined the realism of students' choices of vocational plans and found that "overshooters" (those with highly unrealistic vocational plans compared to their achievement, interest and aptitude, and backgound) did become more realistic in their vocational plans with group counseling, while "undershooters" benefitted more from individual counseling. Flake, Roach, and Stenning (1975) reported that interactive effects occurred over time for both a self-appraisal score and a total score for career maturity: the experimental group increased both scores between pre- and post-test, while the scores of the control group declined. Career attitude gain scores for the experimental group also reached significance.

A few studies have examined the effects of school-level guidance programs. For example, Trebilco (1984) analyzed career maturity and career curriculum

practices and policies in 38 Australian metropolitan secondary schools. Using both student data (job attitudes and certainty, locus of control, and decision-making) and data from principals, career teachers, and subject-matter teachers, Trebilco compared schools on the basis of their career education practices. His major conclusions were: (1) schools with career programs that emphasized student self-awareness had students with higher career maturity in the eleventh grade than schools which did not, and (2) higher career maturity was evident in students in schools with characteristics such as administrative and staff support, availability of career resource materials, and satisfaction of the career teacher. Nevertheless, no single school or student factor explained higher career maturity; rather, schools that had such structural and program characteristics in place and that emphasized student self-awareness reported higher levels of career maturity in students. Presumably, career maturity resulted from exposure to school structure and program design for students whose self-awareness was congruent with such exposure; a longitudinal design would strengthen these conclusions. Myers et al. (1975) paired 24 high schools on student background characteristics, location, dropout rate, and size of counseling service. Using random assignment, one of each pair of schools was designated as experimental and the other as control. Tenth graders in the experimental schools used a computer-based educational and occupational exploration program. Myers et al. reported: (1) significant gains in "planfulness" and knowledge/use of resources for occupational exploration for the experimental group, and (2) significant gains in knowledge and use of resources, as well as information and decision-making skills for females. Computer use time may have confounded these conclusions, however. Planfulness and knowledge/use of resources increased with increased computer use time, and gains were larger with higher use times than with lower (e.g., 5-7 hours vs. 2-4 hours). Another study (Maola and Kane 1976) reported that the computer group learned more about occupational information than the counseled group, which learned more than the control group.

The third set of studies addresses a group of heterogeneous outcomes, including self-knowledge, school attendance, and achievement. Yates et al. (1979) reported self-knowledge gain scores increased as a result of participation in the Vocational Exploration Group (VEG) program to stimulate work attitudes and competencies, and Zytowski (1977) concluded that accuracy of self-information increased due to access to information and interpretation of occupational profiles, but only for interested students. For attendance and academic performance outcomes, Carey and Weber (1979) did not find significant differences between students participating in an experience-based career education program and those in the regular curriculum; only the English language skills (mechanics of language and expression) differed between the two groups in favor of the controls. In a review of the effects of guidance and counseling processes on school achievement, Herr (1982) concluded that high school students benefitted by guidance and counseling in four areas: (1) determining more realistic choices of course work and academic achievement, (2) using counseling to improve scholastic performance for those who had adequate ability and chose to participate, (3) reducing class-cutting and disruptive classroom behaviors and raising grade point averages for lower SES students, and (4) increasing overall levels of student achievement in schools where staff, administration, parents, and guidance personnel collaborated in dealing with students experiencing personal problems. Common themes evident in the studies of high school students Herr reviewed are the importance of guidance and counseling for: (1) those who are under-achievers, socioeconomically disadvantaged,

experiencing personal or social stress, or holding less realistic academic goals but (2) those with adequate ability and motivation.

Several reviews summarize the empirical work on career guidance outcomes (Spokane and Oliver 1983; Campbell et al. 1983; Herr 1982). Spokane and Oliver provide the most comprehensive review because they compute effect sizes in their meta-analysis of available research.

The present study offers somewhat different conclusions than those indicated by Spokane and Oliver for several reasons. First, Spokane and Oliver utilized studies of a variety of client populations; the present study examines high school students only. Second, of the 18 studies with high school students as subjects that are cited by Spokane and Oliver, 9 included group/class interventions; 8 were individual interventions, and 4 were alternative interventions, e.g., computers (3 studies used 2 types of settings). Therefore, over one-half (12 of 21) of the interventions for these studies fell into categories for which Spokane and Oliver admitted that their conclusions were less certain, due to the availability of fewer studies and considerable variation in the size of effects. Finally, Spokane and Oliver aggregate effects that are not statistically significant in the same manner in which they handle those that are significant. Thus, for example, one study (Bergland and Lundquist 1975) reported that one out of eight differences between experimental and control groups was statistically significant, but Spokane and Oliver treat all eight differences in the same way.

Summarizing the research on the effects of guidance and counseling on high school students leads to an overall picture of research on guidance interventions as providing conflicting conclusions about whether those receiving treatments accrue more benefits than those not receiving treatment, suggesting that these studies indicate what specific aspects of guidance and counseling could do rather than what it has done to affect student behavior (Herr 1982). The research seems to be confounded by complex interactions between sex, SES, school and guidance program characteristics (e.g., staff and administrative support, career resource availability) and type of treatment (group or individual). Few studies provide for such complexities in their design; those that do so hint at spurious effects other studies may not have addressed. The most consistent effects of career interventions for high school students seem to be increasing career information knowledge and planfulness, providing students with more congruent and appropriate occupational choices, and increasing self-awareness. These effects are potentially important when placed within context, for example, as a first-stage outcome in which awareness can lead to interest in seeking information or better decision making for specific student subpopulations. Also, guidance and counseling probably does not lead to dysfunctional outcomes, that is, the target behavior does not deteriorate as some psychotherapy studies have noted (Herr 1982).

The results of these intervention studies must be interpreted cautiously and not generalized to all high school populations. There are three primary reasons for caution. First, students serving as subjects in interventions are often volunteers or students interested in career guidance. Researchers who did include nonvolunteers often lost a substantial proportion of subjects due to unavailability (Zytowski 1977), or found treatment-by-motivation interactions (Hanson and Sander 1973; Borman 1972). Second, many nonrandom assignment studies reviewed here did not adjust for pretreatment differences between

experimental and control groups on the dependent variable, nor did they include extensive controls for status characteristics of respondents (e.g., Carey and Weber 1979; Borman 1972; Zytowski 1977). Third, most intervention studies examine specific treatments within one school, providing limited information about the effectiveness of guidance approaches or the effectiveness of guidance compared to other interventions such as experiential education. In addition, the effect of career guidance programs on student outcomes in one school may be difficult to generalize to other schools. For example, Trebilco's study indicated that factors such as administrative and staff support for guidance, counselor satisfaction, and resource availability should be included as important variables creating interaction effects. Also, a "reactive" or intervention study in a school examining a particular group of students cannot provide a valid assessment of an entire school guidance program. Moreover, the long-term outcomes experienced by those exposed to counseling and guidance in high school versus those not exposed, for instance, by higher income, better academic records, and college and employment success (Herr 1982), may not accrue to those involved in short-term studies. Finally, Spokane and Oliver (1983) emphasize that subjects receiving conventional treatment do not constitute control but merely comparison groups. It is concluded that the impact of career guidance programs requires further in-depth examination before firm conclusions regarding the effectiveness of career guidance are justified.

To recapitulate briefly, most assessments of career guidance outcomes consist of highly focused interventions, use the experimental design as a model, and rely on specialized samples. Because students are likely to be aware that they are receiving special attention in these settings, the interventions may be "reactive." The treatment activities and the outcome measures are closely coordinated. Student scores on the outcome measures are measured shortly after completion of the treatment. As Spokane and Oliver state (1983), this type of intervention tends to produce the outcomes it was intended to produce. But careful reading of the original studies shows many complex statistical interactions and reveals that Spokane and Oliver treat results that are not statistically significant as equivalent to those that are.

Although the present study is related to the studies discussed above, it differs in three important respects. First, the purpose of this study is to assess the impacts of an entire guidance program in a school rather than one (or a few) specific interventions. Second, the present study draws on a broader spectrum of social science theory, research, and commentary than the typical evaluation study. Consequently, this paper not only evaluates whether career guidance programs perform the functions implied by the explicit goals of guidance, but also assesses other consequences that are suggested by the critics. Third, the data used in the paper are taken from a large multipurpose survey (High School and Beyond). Consequently, the results are more nearly generalizable than are those of most other studies of guidance, and the outcome measures are not so closely tailored to the "treatments" as has been true in past research.

## Guidance Goals, Objectives, and Methods

Evaluating the impact of career guidance is not a simple task, because the goals are diffuse and fade into objectives, and objectives may be viewed as part of the methodology for achieving other objectives or goals ("enabling

objectives"). Shertzer (1982:16) states: "The most frequently expressed goal of guidance in the nation's schools is the advancement of students' personal development." The primary strategy in achieving this diffuse result is expressed by Shertzer in the following terms: "In that setting [schools], guidance seeks to help students marshal intelligence about themselves and the environment, understand their experiences; and engage in planful behavior to achieve their maximum potentialities (p. 16)." This statement also lacks the specificity needed to provide a clear guide in assessing the outcomes of guidance. Shertzer supplements it with a lengthy list of relatively specific outcomes, such as use of information, improved grades, increased satisfaction with school, decreased discipline problems in school, reduced school dropout rates, reduced "antisocial" behavior, increased participation in extracurricular activities, and increased consistency between career goals and abilities. Recent reviews of empirical assessments of guidance outcomes (Spokane and Oliver 1983; Campbell et al. 1983; Herr 1982; Oliver 1978) also reveal a bewildering variety of outcomes. Herr (1982), for example uses the following categories to classify the outcomes: school achievement; self-concept, self-esteem, and mental health; career development, planning, education and choice; transition to work and work adjustment; and delinquency.

With so many potential outcomes of guidance, how is one to evaluate it? If guidance is shown to have a positive effect on, say, occupational information but not on grades or test scores, is it effective or not? Clearly, it is desirable to identify central aspects of the philosophy of guidance and counseling to use as a starting point in assessing whether guidance and counseling achieves its purposes. Without doubt the focal idea in career guidance is that individuals must be taught information about careers, must achieve self-understanding, and must connect knowledge of careers and self through a process of "true reasoning." Parsons (1909) first espoused this philosophy, and it has been echoed in numerous sources since. A book entitled Matching Youth and Jobs (Bell 1940) embodies the same rationalistic view that profiles of persons and jobs should be coordinated to produce the best possible fit. The philosophy expressed in these old publications generally is viewed as antiquated by contemporary professionals in vocational guidance. The contemporary view is that picking a career and adjustment to economic life are reflected in a developmental process that engages the broad self-conception of each individual (Super 1957, 1963, 1972, 1974). But even Super, who is best known for his emphasis on self-concept and the dynamics of vocational life, emphasizes the importance of individuals engaging in a dynamic process of self-assessment, information gathering, and matching their self-concepts to their careers. For example, as early as 1953 Super wrote:

> Work satisfactions and life satisfactions depend upon the extent to which the individual finds adequate outlets for his abilities, interests, personality traits, and values; they depend upon his establishment in a type of work, a work situation, and a way of life in which he can play the kind of role which his growth and exploratory experiences have led him to consider congenial and appropriate (Super 1953:190).

Most other contemporary theories of career choice and adjustment express the basic idea of correspondence between individual characteristics and occupations or jobs. Holland's personality theory is, perhaps, most explicit (Holland 1973). Lofquist and Dawis (1969) propose that worker satisfaction and

productivity depend on the matchup between individual needs and the job environment. Other major theoretical statements on career choice also contain this central point (e.g., Dudley and Tiedeman 1977; Ginzberg et al. 1951). These basic theoretical conceptions heavily influence at least the goals of guidance practice, as illustrated by the excerpt on guidance strategies from Shertzer (1982) quoted above.

Two central ideas are implicit in the view that the main function of career guidance is to assist persons in vocational choice and adjustment by improving self-understanding and knowledge of the world of work. One is that individuals must assume responsibility for their own lives--adopt a sense of agency regarding their careers. The second is that individuals will develop realistic self-concepts and realistic career plans, based on information and well-thought-out reasoning. These two ideas are strongly embedded in the guidance literature. Regarding a sense of agency, Herr (1982), for example, has written:

> Implicit in such value positions [importance of informed choice] has been the intent of guidance and counseling to help persons become more purposeful and active in the management of the educational, occupational, and personal/social options available to them.... Such value positions stand in opposition to passivity or nonassertiveness in behalf of one's rights or one's aspriations, to idleness or to behavior that is not consciously goal directed. (p. 156)

Herr is similarly explicit about the importance of intelligent choice--

> From the beginnings of this nation in the last century, guidance and counseling have had a continuing commitment to individual rights, to the facilitation of free and informed choice, and to helping persons develop intelligence about their personal characteristics and the opportunities available to them. (p. 156)

In reviewing the works of Super, Ginzberg, Tiedman and other vocational development theorists, Osipow sums up as follows: "Finally, all these writers seem to assume that the ability and motivation to evaluate oneself realistically can be enhanced through education and counseling" (Osipow 1983:208).

These two implications of theory and practice--the importance of a sense of agency and realistic assessment of self and of one's circumstances--provide the basis of the empirical hypotheses to be tested in this paper. First, we hypothesize that schools with active guidance programs foster a sense of agency in their students. Second, schools with active guidance programs produce students with realistic career plans and self-assessments. The first hypothesis is tested by observing whether students in schools with active guidance programs express higher internal locus of control and higher self-esteem than students in other schools. The second set of hypotheses is assessed by testing for statistical interactions. If the hypotheses are true, then the impact of ability, grades, and occupational plans on educational plans should be stronger in schools with active guidance programs than in other schools. Likewise, occupational plans should be more closely dependent on educational plans and abilities in schools with active guidance programs than in other schools. Finally, perceived ability to complete college should depend more closely on

objective indicators in strong school guidance environments than elsewhere. Obviously the general hypothesis implies a number of other interactions similar to those listed here, but absence of appropriate data precludes tests of other hypotheses.

## Alternative Interpretations of Guidance Functions

The philosophy of guidance and counseling presumes a harmony between individual needs and abilities, and interests and demands in the labor market. Shertzer (1982) sums up his statement of guidance goals in the following terms:

> In short, while most guidance goals assume that with such programs [guidance programs summarized earlier in the article]--students will feel better, function better in school (and in life in all its aspects), achieve at higher levels, and live up to their potentials--there (sic) goals also imply adherence to the insitutions's mission as well. (emphasis added, p. 16)

The idea that individual needs and institutional demands generally are not in conflict is inherent in the hypothesis that individuals express their self-concepts through their work. The importance of expressing self-concept through work is a pervasive notion in the vocational development literature. Super (e.g., 1957, 1972) is the paramount proponent of this view.

For all or most individuals to find fulfillment in their work, however, requires a sufficient quantity of jobs that permit and foster personal growth and development. This basic assumption (generally unstated) of the guidance and counseling philosophy has been repeatedly questioned. A number of flamboyant radical assessments have appeared in print (e.g., U. S. Department of HEW 1973; Bowles and Gintis 1976; Carnoy and Levin 1976; Grubb 1978, 1984; Grubb and Lazerson 1975; Warnath 1975). Most of these commentaries direct their attention to the relationship between education and work, or vocational education and work, without specific mention of the role of guidance and counseling. Warnath (1975), however, focuses specifically on contradictions he sees in career guidance and counseling. Regarding vocational theory he writes:

> One basic assumption underlying the current vocational theories is populist in nature: that each individual, with adequate motivation, information, and guidance, can move through the educational process to satisfying job goals that allow him or her to express personality characteristics or implement self-concept. (p. 422).

Regarding the job structure he poses the following, in contrast:

> Under present conditions, where almost all people work for organizations whose survival is dependent on generating profit and operating efficiency, the needs of the individual are subordinated to the goals of the organization. (p. 422)

The key mechanism here is the utilization of incentives. The incentives are for profits and organizational stability, not for meeting the full range of

employee needs. In commenting on the career education movement, Grubb and Lazerson (1976) emphasize a slightly different aspect of the basic point:

> Human resources appear not to be particularly scarce or highly valued, as compared with capital resources. Nor is this illogical: an economic system in which investment and production decisions are made by a handful of owners and managers of privately owned capital, with the profit from production held by capital owners, will obviously work to develop capital to the greatest possible extent. (p. 245).

The issues raised by these strong assertions are exceedingly complex; their resolution falls far outside the scope of the present paper. But, given that they were true, one might expect different outcomes of guidance and counseling than those predicted by the goals and philosophy of the profession. To determine the implications of these ideas for the outcomes of guidance and counseling, one must ask: If guidance and counseling do not do a good job of helping youth achieve self-actualization through work (because the structure of jobs does not permit it), then what function do guidance and counseling serve? Radical critiques of schooling imply that guidance and counseling tend to serve the interests of business elites. Carnoy and Levin (1976) state the point as follows:

> In our view the schools of a society serve to reproduce the economic, social, and political relations.... (p. 4).

Since guidance and counseling are part of the schools, they would perform functions that help to perpetuate existing status and power relationships. On this point there probably is little disagreement between the philosophy of guidance and counseling and the critics. The difference is that professionals in guidance and counseling tend to assume that the interests of individuals and demands in the social and economic system are not in conflict; the critics charge that they do conflict.

To this point we still do not have sufficient specificity from the radical critics to identify the empirical relationships implied by their critique. Carnoy and Levin (1976) do provide the needed specificity. They claim that a primary function of schools, and by implication of guidance and counseling, is carried out "by developing lower-class children to be better workers and middle-class children to be better managers. (p. 9) Bowles and Gintis (1976) make a similar charge regarding the function of schooling. This same theme is expressed in a number of publications relating to curricu-lum tracking in U.S. high schools (Rosenbaum 1976; 1980; Alexander and McDill 1976; Alexander, Cook, and McDill 1978; Oakes 1982; Boyer 1982). The argument here is that tracking reinforces the stratification system by diverting lower status youth and minorities away from the academic curriculum track. This basic idea is applied specifically to guidance and counseling in schools by Warnath (1975). Grubb and Lazerson (1976) agree and make a more specific charge than Warnath. They claim that the matching-people-to-jobs function of career education reinforces race and gender stereotypes as well as the relationships between parental social class and the plans of their children.

The critics, then, aver that lower class youth and minorities will be exposed to guidance activities that lead them to plan for low status and low-paying jobs and to aspire to low levels of educational attainment. Given information on the content of career guidance for each individual student, therefore, one would expect to observe an intervening-variable model (similar to that proposed by the critics of curriculum tracking). In this model, status variables would affect the content of career guidance, which would, in turn, influence educational and occupational goals and attainments. Data on individual exposure to career guidance are not available for the present paper. But extensive information is available describing how active the career guidance program in each school is. It is hypothesized on the basis of the critiques of schooling and guidance that the effects of status variables on the educational and occupational plans of youth in schools with active career guidance programs are stronger than those effects in other schools. Additionally, one might expect a similar interaction regarding youths' perceived ability to complete college. If guidance and counseling tend to reinforce the status characteristics of youth, then guidance activities would tend to persuade low-status youth that they do not have the ability to attend college (and vice versa).

The implications of critiques of schooling and of career guidance for the impact of career guidance on locus of control and self-esteem are not explicit in the literature. Nevertheless, it appears reasonable to infer that the critics would be skeptical of the capacity of guidance programs to excite a sense of agency in students, because of what the critics see as a glaring contrast between the philosophy of self-actualization through work and the lack of opportunity for work activities that permit personal growth and development.

The predictions implied by the goals of career guidance and the statements of critics of school guidance programs are summarized in table 2.1.

## Data

The data used in this paper are part of the High School and Beyond (HSB) database. The High School and Beyond survey was sponsored by the National Center for Education Statistics, and the data collection was carried out by National Opinion Research Center (NORC). High School and Beyond is a major longitudinal survey of high school youth. Base year data were collected in 1980, the first follow-up was completed in 1982, and the second follow-up was conducted in 1984. Plans call for additional follow-ups at 2-year intervals. The base year survey contains data describing over 58,000 student respondents, split between students who were sophomores (N = 30,030) in 1980 and those who were seniors (N = 28,240).

Students in the sample completed questionnaires at each wave of data collection. The base year questionnaires requested information about respondents' background, personal characteristics, school experiences, career aspirations, attitudes toward work, part-time work during high school, and a number of other topics. The first follow-up for the younger cohort repeated most of the questions in the base year questionnaire, thus permitting extensive analysis of change. The first and second follow-ups of the older cohort and the second follow-up of the younger cohort requested detailed information regarding

TABLE 2.1

HYPOTHESES

| Predictions Implied by Guidance Goals | Predictions Based on School Guidance Critics |
|---|---|
| **Linear Relationships** | |
| Students attending schools with active career guidance programs exhibit stronger internal locus of control than students attending other schools. | Guidance programs do not have the expected effect on locus of control. |
| Students attending schools with active guidance programs exhibit more positive self-esteem than do other students. | Guidance programs do not have the expected effect on self-esteem. |
| **Interaction Relationships** | |
| The effects of test scores, grades, and occupational plans on educational plans are stronger in schools with active career guidance programs than in other schools. | The effects of race, gender, and socioeconomic background are stronger in schools with active career guidance programs than in other schools. |
| The effects of test scores, grades, and educational plans on occupational plans are stronger in schools with active career guidance programs than in other schools. | The effects of race, gender, and socioeconomic background are stronger in schools with active career guidance programs than in other schools. |
| The relationships between perceived ability to complete college and objective indicators of ability such as test scores and grades are stronger in schools with active career guidance programs than in other schools. | This interaction is not predicted explicitly, but it is inferred that perceived ability to complete college is more dependent on race, gender and socioeconomic background in schools with active guidance programs than in other schools. |

work, family formation, education, military service, and attitudes. In addition to the student questionnaire data, a lengthy questionnaire was completed by the principal or other administrator of each school during the first two waves of data collection, students completed cognitive tests, teachers completed brief checklists in the base year only, and a subsample of parents completed base year questionnaires. (See Jones et al. 1983 and Frankel et al. 1981 for more detail).

In addition to the primary HSB data, five research institutions formed a consortium to collect supplemental data from principals, teachers and other staff in approximately half of the original HSB schools. Members of the consortium are--

The National Center for Research in Vocational Education
The Ohio State University
Columbus, OH 43210

The Wisconsin Center for Education Research
The University of Wisconsin-Madison
Madison, WI 53706

The Institute for Research in Educational Finance and Governance
Stanford University
Stanford, CA 94305

The Center for Educational Policy and Management
The University of Oregon
Eugene, OR 97403

The Center for Social Organization of Schools
Johns Hopkins University
Baltimore, MD 21218

Members of the consortium have shared expenses of a subcontract with NORC to collect the data, cooperated in constructing the survey questionnaires, and divided the work of data preparation. Data collection for the Supplemental Survey of the HSB occurred in the spring of 1984. It would have been preferable to coordinate the timing of this data collection with that of the first follow-up HSB survey, in order to describe schools during the time period in which respondents were in attendance. The generally slow pace of change in institutions such as schools, however, suggests that the timing of the Supplemental Survey is not a serious enough problem to distort the major patterns of relationships.

Five questionnaires were prepared for the Supplemental HSB survey, one corresponding to each of five types of respondent: high school principal, teacher, vocational coordinator, head of guidance, and community service coordinator. Up to 30 teachers in each school responded to the teacher questionnaire; only one respondent per school completed each of the other questionnaires. (See Jones, Knight, and Ingels 1984 for more detail on the Supplemental Data collection).

This paper makes use of the base-year and first follow-up questionnaire data on the younger cohort (1980 sophomores), base-year and first follow-up

test scores, base year principal data from the main HSB survey, and information from the guidance questionnaire associated with the Supplemental Survey. Information from the guidance questionnaire of the Supplemental Survey and the principal questionnaire of the main survey was merged with student data such that each student (up to 36) in a given school was assigned the same value on all variables taken from those two questionnaires. Because less than half of the original HSB schools participated in the Supplemental Survey, the sample size of the merged data is 10,955.

## Variables

Five broad categories of variables are used in this study--outcomes, career guidance program characteristics, lagged outcome measures, socioeconomic background and ascribed status characteristics, and geographic regions.

### Outcomes

There are five outcomes--locus of control, self-esteem, perceived ability to complete college, educational expectation, and occupational expectation. Their operational definitions are summarized as follows:

- Locus of control--scale consisting of six items such as "Good luck is more important than hard work for success." Five response categories ranging from "strongly agree" to "strongly disagree" were provided. Items such as the one quoted were reflected so that on the scale high numeric values represent high internal locus of control.

- Self-esteem--six-item scale consisting of items such as "I take a positive attitude toward myself." The same response categories used for locus of control were used here. All items in the index were scaled so that high numeric values represented high (strong) self-esteem.

- Perceived college ability--response to a single item: "Whatever your plans, do you think you have the ability to complete college?" (1-yes, 0-no).

- Educational expectation--response to the question: "As things stand now, how far in school do you think you will get?" Nine response categories were provided. These are scaled to reflect the respondent's approximate number of years of schooling.

- Occupational expectation--response to the item: "Write in here the name of the job or occupation that you expect or plan to have when you are 30 years old. Even if you are not sure, write in your best guess. Which of the categories below comes closest to describing that job?" Seventeen broad response options were provided. A Duncan SEI estimate for each occupational category defines the numeric value of the variable. Nonoccupational categories such as "not working" and "homemaker or housewife only" were coded missing.

Career Guidance Program Characteristics

The fundamental concept that we intend to reflect in the measures of career guidance program characteristics is the degree to which a school has an active guidance program in place. By active program is meant heavy student usage of a variety of career guidance services. While many additional variables describing the guidance programs of schools are available in the data--such as program goals, linkages to the community, and resources devoted to planning--for this initial paper on the effects of guidance it was decided to confine attention to variables reflecting student usage. Presumably, other variables such as goals and planning affect student outcomes through their impact on the composition and usage levels of services.

A total of 23 variables were constructed. Nineteen of these are primary variables, and the remaining 4 are indexes defined on the 19. Out of the 19 primary variables, 15 are defined as products of percentage of students using the service and a measure of usage intensity or frequency. These 15 types of services are: (1) courses in career decision making, (2) occupational information units in subject-matter courses, (3) individual counseling, (4) group guidance or counseling, (5) exploratory work experience (e.g., Co-op), (6) career days, (7) vocational assemblies or speakers in classes, (8) job-site tours, (9) tours of postsecondary institutions, (10) job shadowing, (11) simulations such as Singer or SRA job experience kits, (12) testing for career planning purposes, (13) training in job-seeking skills, (14) noncomputerized career information, and (15) computerized career information. Four additional primary variables are defined by responses to single items: percentage of students using educational information resources such as college catalogues, percentage of students using computerized career information; hours per day of student use of computer terminals for career guidance; and hours per day of student use of microcomputers for career guidance.

In constructing indexes, the primary variables were divided into two subsets. The first consists of four primary variables: (1) courses in career decision making, (2) occupational information units in subject-matter courses, (3) individual counseling, and (4) group guidance and counseling. These four variables are classified as the central technology of guidance and counseling, and the remaining variables are classified as secondary technology.[1] The four indexes were defined with this classification in mind; they are as follows:

- Central technology is the average of four primary variables measuring central technology.
- Secondary technology is the average of the remaining variables.

[1]This classification is based on a reading of the guidance literature (e.g., Gysbers and Moore 1981) and on conversations with career guidance professionals. Special thanks are due to Juliet Miller in this connection.

o weighted summary is the 3*core technology + secondary technology.

o unweighted summary is the average of all primary variables.

The measurements defining the primary variables were defined by estimates provided by the respondent to the guidance questionnaire in each school in the Supplemental HSB Survey.

## Lagged Outcome Measures

Due to the longitudinal design of HSB, two measures of each outcome are available for each student respondent, one when the respondent was a high school sophomore and one two years later. The dependent variables in the regressions are always defined by the time-two measure. In every case, the corresponding time-one measure is included as one independent variable.

## Status Characteristics

Fourteen status characteristics were entered in each regression equation as statistical controls. These characteristics are: (1) gender (1=female, 0=male), race (1=black, 0=other), ethnicity (1=Hispanic, 0=other), father's occupation (Duncan SEI assigned to 14 broad occupational categories), father's education (approximate number of years), mother's occupation (Duncan SEI to same categories used for fathers), mother's education (defined as for fathers), log of family income, number of siblings, father not in household (1=not in household, 0=in household), mother not in household (defined as for father), number of family possessions from a checklist (e.g., two or more cars/trucks, 50 or more books, own bedroom), whether family owns home (1=yes, 0=no), and number of rooms in the home. The first three of these variables are ascribed status characteristics; the rest are indicators of the socioeconomic status of one's family.

In addition to the substantive status variables, five missing-data dummies were included in each regression that also included the corresponding status characteristic. One missing-data dummy is associated with each of the following variables: father's occupation, father's education, mother's occupation, mother's education, and family income. The missing-data dummies help to resolve in an empirical way what would otherwise be knotty conceptual and measurement difficulties, such as how to treat mother's occupation if she reports she is a "housewife only" or how to compensate for the likelihood that reporting errors on income are negatively correlated with income.

## Region

Dummy variables for each of eight geographic regions as defined by the U.S. Bureau of the Census are included in the regressions. The West North Central region is omitted and therefore becomes the comparison group. These variables are included because past experience with the HSB data shows that they affect results on substantive questions, even when extensive controls for other variables are included.

## Models and Analysis

Although longitudinal data generally are viewed as affording critical benefits not available in cross-sectional data, exactly how longitudinal data can best be used to help identify cause-and-effect relationships is not self-evident. A number of questions immediately arise. Should the dependent variables be change scores, or should the dependent measures be time-two (or later) observations with one or more lagged measure(s) of the dependent variable included as regressor(s)? If change scores are dependent variables, should a lagged measure of the dependent variable be included as a regressor? Should the independent variables all be limited to lagged measurements, or should change scores and/or concurrent measures of the independent variables be included as regressors? How should regression coefficients be interpreted if the lag time between cause and effect is not the same as the lag time between measurements? What processes occur during the interval between measurements that generate the relationships observed in the data? There are no easy answers to any of these questions.

It is argued here that the answer to each of these questions must depend on an explicit model of the processes that operate over continuous time to generate the observed data. Different models certainly will imply different answers to the questions. Generally it will not be possible to achieve a definitive choice between conflicting models by estimating parameters from information in a given data set. The reason is that there are always more unknown parameters than estimating equations. Ultimately, these choices must be made on the basis of comparisons of forecasts made from different models.

With this background in mind, the paper presents a rudimentary differential equation model as the basis for the empirical work with regression analysis. Differential equation models express hypotheses about the process of change over continuous time (Coleman 1968; Doreian and Hummon 1976; Rosenfeld 1980). A partial adjustment model provides a heuristic basis for connecting the substantive theory to the equations (Doreian and Hummon 1974; Rosenfeld 1980). Suppose that $y_1$ represents the number of years of education that a youth expects to complete at time t. Changes in $y_1$ over each short interval of time dt occur in the direction of an equilibrium value $y_1^*$. These ideas are represented succinctly in the expression

$$(1) \quad \frac{dy_1}{dt} = b(y_1 - y_1^*), \quad b<0,$$

where $dy_1/dt$ is the change rate over the short time interval dt (lim dt --> 0), and b is a constant. Since b is negative, changes in y always lead toward the equilibrium value $y_1^*$.

If $y_1^*$ is postulated to be a function of other variables thought to influence educational plans, then the model is transformed into a model about interrelationships among variables operating over continuous time. In the present

case, let $y_1^*$ be a linear function of occupational plans, test scores, grades, exogenous status characteristics, and region:

$$(2) \quad y_1^* = p_o + p_1x_1 + \ldots + p_Jx_J + q_2y_2 + \ldots + q_Ky_K$$

where the $x_j$ are exogenous variables, and the $y_k$ are occupational plans, test scores, and grades--variables that may be affected by educational plans and by each other (i.e., endogenous variables).

Inserting equation (2) into (1) generates a linear differential equation of the following form:

$$(3) \quad \frac{dy}{dt}1 = a_o + a_1x_1 + \ldots + a_Jx_J + b_1y_1 + \ldots + b_Ky_K$$

with $a_j = -bp_j$, and $b_K = -bq_K$ ($K \neq 1$; $b_1 = -b$). The same reasoning can be applied to each endogenous variable so that an entire system of differential equations of the form of (3) results. This system exhibits the structure of a cross-lagged regression analysis:

$$(4) \quad y_t = A^*(t)X + B^*(t)y_o$$

where

$y_1$ = Kx1 vector of observations on the endogenous variables at time 1,
$y_o$ = Kx1 vector of observations on the endogenous variables at time 0,
x = Jx1 vector of observations on exogenous variables, all assumed constant over time,
$A^*(t)$ = KxJ matrix of coefficients,
$B^*(t)$ = KxK matrix of coefficients.

(See Coleman 1968; Doreian and Hummon 1976; Hotchkiss 1979 for more complete development.)

Equation (4) predicts a time trend for each endogenous variable for every point along the continuous time scale. Hence, in principle, the model can be tested by evaluating the forecasts it generates. In fact, however, observations from at least three time points are required (Hotchkiss and Chiteji 1981).

In the present paper, equation (4) is used to justify the statistical estimation procedure. It answers the key questions posed above. (1) It does not matter whether change scores on time-two measures are treated as the dependent variables so long as the lagged (time one) measures are included as regressors. [From (4), $\Delta y = A^*(t)x + [B^*(t)-I]y_o$, where I is a conformable identity matrix and $\Delta y = y_t - y_o$]. (2) Change scores and concurrent measures of independent variables should not be used as independent variables in the regressions. (3) The regression coefficients calculated from a cross-lagged regression index the total effects accumulated over a specific interval of time. This point derives from the fact that the regression coefficients are seen to be dependent on the length of time between measurements. Thus, a two-wave panel with 1-year spacing between waves is predicted to generate different regression coefficients than a study with 2-year spacing. The model

not only leads one to expect this discrepancy but also yields exact numeric predictions about the magnitudes of the discrepancies.[2]

In brief, then, the statistical analyses in this paper consist of cross-lagged regressions in which time-two measures of outcomes are dependent variables, and the regressors are comprised of lagged endogenous variables and exogenous variables. This particular specification of the regressions is selected because it is consistent with an explicit model of process over continuous time. Numerous other possible specifications are easy to imagine (several are listed above), but the connection between these alternative specifications and the processes that generated the observations is not so easy to imagine. Unless the regressions are connected to a process model, their specification appears ad hoc. Certainly, without such a connection, the empirical results could not be used to generate forecasts over any time interval whose length were not equal to the length of time between measurements in the data used to estimate parameters of the model. Indeed, it would be easy to specify regression equations that could not be used in forecasts at all.[3]

Unfortunately, the differential-equation model does not help resolve issues regarding proper methods of statistical estimation. This is because all estimation methods depend (explicitly or implicitly) on assumptions regrading disturbance variables, and the differential equation model contains no hypothesis about the disturbances. In principle, this problem could be remedied by including specification of the behavior of disturbances over time (see Arminger 1983 for an example), but such specification is seldom included in practice. By far the simplest solution to statistical estimation is to apply ordinary least squares (OLS) regression to the cross-lagged structure. This strategy can be justified on grounds that all regressors are predetermined (either exogenous or lagged endogenous) and hence independent (or at least uncorrelated) with all disturbances (Goldberger 1964). On the other hand, Hannan and Young (1977) point out that OLS estimation is particularly susceptible to misspecification of the type characterized by omission of an exogenous variable that is constant over time but varies among respondents. They show how to correct for this type of problem by methods of pooling cross-sections and time series, but the methodology requires at least measures from three points in time. In the final analysis, any estimation method can be shown to be biased if key assumptions are violated. Researchers therefore are left to make judgments regarding which set of assumptions seems most plausible. There seldom exists sufficient information to justify one set of assumptions over another. Lacking clear reason to do otherwise, therefore, this paper applies OLS regression, because of its ease of application and interpretation and because it is derived from a mean square error criterion. If the ultimate goal is to generate accurate forecasts, then it is sensible to estimate coefficients in a way so as to minimize prediction error.

---

[2]One of the more interesting aspects of the results under discussion here is that even the sign of the coefficients may depend on the length of time between measurements, though sign reversal probably would be rare in practice.

[3]One example is the case in which all dependent and independent variables are defined as change scores, and at least some independent variables are esxogenous.

## Results

Table 2.2 displays partial standardized regression coefficients to assess the hypotheses that schools with active career guidance programs foster internal locus of control and high self-esteem. Four separate regressions are reported for each of these 2 outcomes; the first includes 14 separate indicators of usage of the guidance program. The second includes two indexes of usage, one for the central technology and one for the secondary technology. The third and fourth include the weighted and unweighted summaries, respectively. It should be noted that each equation contains controls for the lagged dependent variable, an array of 14 status characteristics, and 8 region dummies.

The findings are easily summarized. There is not a single effect estimate in the table that is large enough to be noteworthy. While a few scattered statistically significant coefficients occur, the largest in absolute magnitude is less than .03. Thus, it is concluded that none of the separate indicators of usage nor any of the aggregated indexes affects locus of control or self esteem.

Calculations for the interaction models were carried out by running separate regressions for each category of a dichotomy created from the "central-technology" variable. Central technology was split at its mean, but due to skew in its distribution, about two-thirds of respondents ended up in schools below the mean. Table 2.3 displays regression coefficients associated with the interaction hypothesis. The columns labled "inactive" indicate that the regressions were calculated for respondents attending schools which were below the mean on central technology. Columns labled "active" indicate regressions calculated on remaining respondents.

There are no interactions of noteworthy magnitude in table 2.3. The pattern of effects in each equation is sensible, but that pattern does not differ in any substantial way between schools with "active" and schools with "inactive" guidance programs.

When several variables are used to indicate broad concepts, such as status background and ability, the number of variables included in a regression equation to represent each broad concept may obscure the fundamental results. To offset this possibility, regressions were specified using restrictions on the coefficients to simulate use of two indexes, one to represent status background and one to represent objective measures of ability. The main patterns stand out in bold relief with the indexes. Both background and ability measures influence educational expectations, occupational expectations, and perceived college ability. The <u>direct</u> influence of the ability index is higher than that of background, but no interactions by level of activity in the guidance program are observed.

The conclusion is clear. Based on the data presented here, <u>neither</u> the predictions drawn from career guidance goals nor those based on the critiques of schooling and guidance are supported. In fact, attending a school that has an active career guidance program does not appear to have much affect one way or the other on any of the outcomes studied here.

TABLE 2.2

EFFECTS OF GUIDANCE ON LOCUS OF CONTROL AND SELF-ESTEEEM

| Independent Variables | Dependent Variables: Locus of Control | | | | Self-Esteem | | | |
|---|---|---|---|---|---|---|---|---|
| Exploratory work experience | .0071@ | — | — | — | .0200@ | — | — | — |
| Career days | .0112 | — | — | — | .0161 | — | — | — |
| Voc. assemblier/speakers | -.0016 | — | — | — | -.0230@ | — | — | — |
| Job-site tours | .0220+ | — | — | — | .0050 | — | — | — |
| Tours of post. sec. insts. | -.0147 | — | — | — | -.0041 | — | — | — |
| Job shadowing | -.0033 | — | — | — | .0013 | — | — | — |
| Simulations | -.0130 | — | — | — | .0018 | — | — | — |
| Testing for guidance | .0133 | — | — | — | .0091 | — | — | — |
| Training in job search | -.0177 | — | — | — | -.0291* | — | — | — |
| Noncomputerized career info. | -.0097 | — | — | — | -.0043 | — | — | — |
| Computerized career information | .0181 | — | — | — | .0073 | — | — | — |
| Courses in career decision making | -.0075 | — | — | — | -.0230+ | — | — | — |
| Occupational info. units | .0141 | — | — | — | .0251+ | — | — | — |
| Individual counseling | -.0195+ | — | — | — | .0087 | — | — | — |
| Group guidance | .0010 | — | — | — | .0088 | — | — | — |
| Central technology index | — | -.0037 | — | — | — | .0186 | — | — |
| Secondary technology index | — | -.0032 | — | — | — | -.0123 | — | — |
| Weighted summary | — | — | -.0058 | — | — | — | .0100 | — |
| Unweighted summary | — | — | — | -.0050 | — | — | — | .0044 |

NOTES:
1. Entries are standardized regression coefficients.
2. Each equation contained controls for region dummies all status background variables [listed in section titled "variables," and lagged outcomes measure].
3. Absent entry means variable omitted from the equation.
4. @ p ≤ .10.
   + p ≤ .05.
   * p ≤ .01.

BEST COPY AVAILABLE

TABLE 2.3

INTERACTION MODELS

| | Dependent Variables (time 2) | | | | | |
|---|---|---|---|---|---|---|
| | Occupational Expectation | | Educational Expectation | | Perceived Coll. Ability | |
| | Guidance Program: | | Guidance Program: | | Guidance Program: | |
| | Inactive | Active | Inactive | Active | Inactive | Active |
| Gender (1=female,0=male) | 5.6162 | 5.3000 | -.0776 | -.0581 | .0389 | -.0175 |
| | (.1238***) | (.1196***) | (-.0155) | (-.0115) | (.0209@) | (-.0098) |
| Race (1=black, 0=other) | 2.1718 | 2.3849 | .7771 * | .4548 | .2638.1682 | |
| | (.0331+) | (.0406+) | (.1072***) | (.0684***) | (.0981***) | (.0798***) |
| Ethnicity (1=Hispanic, 0=other) | -.1852 + | 3.0854 | .1960 | .1376 | .0327 | -.0530 |
| | (-.0029) | (.0474*) | (.0278*) | .0186 | (.0125) | (-.0202) |
| Father's occupation | .0525 | .0388 | (-.0021) | .0013 | .0006 | .0010 |
| | (.0540**) | (.0408@) | (-.0193 | (.0120) | (.0157) | (.0268) |
| Father's education | .4661 | .4531 | .1358 | .1180 | .0070 | -.0103 |
| | (.1011**) | (.1020+) | (.2661***) | (.2339***) | (.0372) | (-.0574) |
| Mother's occupation | .0430 | .0058 | -.0004 | -.0006 | -.0002 | .0010 |
| | (.0495*) | (.0069) | (-.0039) | (-.0059) | (-.0068) | (.0324) |
| Mother's education | .3650 | .3461 | .1325 | .1162 | .0148 | .0034 |
| | (.0632+) | (.0601@) | (.2071***) | (.1775***) | (.0625+) | (.0147) |
| Number of siblings | .1091 + | -.3738 | -.0190 + | -.0574 | .0044 | -.0127 |
| | (.0107) | (-.0374@) | (-.0169+) | (-.0506***) | (.0106) | (-.0315+) |
| Father not in HH (1=out,0=in) | .3484 | -.4860 | -.0137 | .0603 | .0513 | -.0121 |
| | (.0058) | (-.0084) | (-.0021) | (.0091) | (.0208@) | (-.0052) |
| Mother not in HH (1=out,0=in) | 1.1716 | 1.0610 | -.0986 | .0601 | -.0310 | -.0239 |
| | (.0170) | (.0115) | (-.0087) | (.0057) | (-.0074) | (-.0064) |
| Log of family income | 1.3907 | .0632 | .3202 | .2090 | .1106.0655 | |
| | (.0575+) | (.0028) | (.1196***) | (.0829*) | (.1114***) | (.0731+) |
| Number of possessions | -5.3612 | 3.9895 | -.1764 | -.0986 | .0924 | .2091 |
| | (-.0505**)** | (.0362@) | (-.0150) | (-.0079) | (.0212) | (.0471*) |
| Home owner (1=yes, 0=no) | 1.4598 | -.0319 | -.1155 | -.1283 | -.0278 | -.0355 |
| | (.0267+) | (-.0006) | (-.0191+) | (-.0213) | (-.0124) | (-.0166) |
| Number of rooms in home | .1134 | -.0784) | .0056 | .0173 | -.0087 | .0083 |
| | (.0097) | (-.0068) | (.0043) | (.0133) | (-.0181) | (.0180) |
| Education exp., base year | .7305 | .7166 | .3353 | .3613 | .0236 | .0285 |
| | (.0839***) | (.0844***) | (.3479***) | (.3747***) | (.0661***) | (.0834***) |
| Occupational exp., base year | .2453 | .2192 | .0064 | .0057 | .0014 | .0015 |
| | (.2436***) | (.2145***) | (.0578***) | (.0490**) | (.0337*) | (.0360+) |
| Coll. ability, base year | 1.2064 | .7367 | .1977 | .1461 | .2922 | .2665 |
| | (.0562***) | (.0330+) | (.0833***) | (.0576**) | (.3318***) | (.2957***) |
| Verbal test score (base year) | .2728 | .2908 | .0272 | .0144 | .0128 | .0095 |
| | (.1089***) | (.1185***) | (.0982***) | (.0518+) | (.1241***) | (.0957**) |
| Math test score (base year) | -.0265 | .0327 | .0201 | .0176 | .0021 | .0050 |
| | (-.0109) | (.0139) | (.0750***) | (.0655**) | (.0211) | (.0526+) |
| Science test score (base year) | -.0347 | -.0488 | .0039 | .0029 | .0026.0007 | |
| | (-.0155) | (-.0222) | (.0158) | (.0118) | (.0283@) | (.0083) |
| Civics test score (base year) | .0275 | .1066 | .0043 | .0104 | .0031 | .0026 |
| | (.0122) | (.0481+) | (.0174) | (.0413+) | (.0332+) | (.0291) |
| Grade average (base year) | .9028 | .3731 | .2282 @ | .3355 | .1026 | .1323 |
| | (.0341+) | (.0132) | (.0716***)+ | (.1042***) | (.0868***) | (.1157***) |

NOTES: 1. Entries not enclosed in parentheses are unstandardized partial regression coefficients, and can therefore be compared between "active" and "inactive" columns. Entries enclosed in parentheses are standardized regressions and can therefore be compared within columns (across variables).

2. Indicators of level of statistical significance following the standardized coefficients apply to the single coefficient in the conditional equation. Indicators of statistical significance displayed outside of parentheses test the hypothesis that coefficients differ between columns. Tests of the significance of the differences comparing all coefficients in "inactive" schools to those in "active" schools are significant at $p \leq .05$ in all three equations.

3. Each equation included controls for 8 region dummies.

4. @ $p \leq .10$, + $p \leq .05$, * $p \leq .01$, ** $p \leq .001$, *** $p \leq .0001$.

BEST COPY AVAILABLE

## Summary and Conclusions

This report assesses effects of school career guidance programs on five outcomes which, it is argued, reflect the central mission of career guidance as expressed in the professional guidance literature. First, it is concluded from a reading of this literature that a fundamental goal of guidance is to inculcate a sense of agency or mastery over one's career. Two outcomes are used to index sense of agency--locus of control and self-esteem. Of the two, locus of control has by far the best face validity as an index of sense of agency or control over one's fate. A variety of measures of the degree to which schools have in place an active career guidance program fails to reveal any substantial influence on either of those two outcomes. There is a slight tendency for larger effect estimates to be associated with self-esteem, but no effects are of substantial magnitude.

It is inferred from critiques of career guidance that guidance programs do not affect students' sense of agency, because the economy does not produce jobs with outlets for personal development in sufficient number that most students would believe they were masters of their occupational fates. The data tend to support the critics on this point. Support for the critics is not strong, however, because the effect of guidance on students' sense of agency is not a central part of their critique.

The second fundamental aspect of guidance philosophy addressed in this paper is the notion that career guidance should assist students in developing their career goals and self-precepts in line with objective evidence available to them. On the basis of this goal it is predicted that youth attending schools with active guidance programs will develop educational expectations, occupational expectations, and perceived ability to complete college that are more closely associated with each other and with objective indicators of ability such as test scores and grades than is the case for students attending schools with less active guidance programs. On this point, the goals of guidance are more clearly inconsistent with critics of career guidance than in the previous instance. The critics charge that guidance programs reinforce the influence of status characteristics on career goals and perceived college ability. The data do not support either viewpoint. Few interactions of the type predicted from either source are statistically significant, and none are of substantial magnitude.

Recent reviews of empirical evaluations of career-guidance effectiveness have concluded that guidance does indeed produce the outcomes it is intended to produce. Although our own review of this evaluation literature is somewhat more skeptical, the focused evaluation studies apparently have produced more evidence of the effectiveness of guidance than is presented in this paper. There are several possible reasons for this discrepancy. First, the present paper examines effects of guidance programs in schools, whereas most of the evaluation studies assess the effectiveness of specific guidance techniques in producing short-run changes in outcomes that are tailored to assess effects of the treatment. In essence, the present study assesses whether the combined effects of a number of specific guidance activities in a school are large enough to be detected in changes occurring over a 2-year time interval.

A second likely reason for the discrepancy between the findings of this study and those of the evaluation studies is that the outcomes of this study are not the same as those most commonly used in the evaluation studies. Specially designed batteries of questions to assess high-level concepts such as "vocational maturity" are the most frequently used measures of outcomes in the evaluation studies. In contrast, the present study uses standard measures of career expectations, a measure of perceived ability to complete college, an index of self-esteem, and an index of locus of control. If the present study had had available a scale of locus control, for example, designed specifically to focus on career content, the results of the study might have been different.

Another potentially important difference between the study and many of the evaluation studies is the use of random assignment in the evaluation studies and its absence in the present case. No matter how carefully one specifies a structural equation, without random assignment there is always the possibility that some misspecification has occurred. However, to argue that omission of an important variable from our equations accounts for the findings, one must identify one or more important "supressor" variables. Experience shows that supressor variables are rare in practice.

A fourth possible reason for the discrepancies between our findings and those of the evaluation studies is the chance that motivation by treatment interactions account in part for the more positive findings of the evaluation studies. Many of the evaluation studies were conducted with volunteer samples, implying high motivation. If, as was observed by Borman (1972), treatment effects occur only for highly motivated students, one would not expect to see strong evidence of career-guidance effectiveness in a large general sample.

Certainly, this study has not produced conclusive evidence that career guidance programs in high school are ineffective. It has, however, raised important questions. Some of those questions are substantive and some are conceptual. Consider the substantive issues first. For the moment, assume that a number of specific guidance "technologies" are available that operate as they were designed to operate when implemented "properly." Why don't these specific interventions aggregate up to the school level so that schools with heavy usage of guidance activities can be differentiated from those with low usage? One possibility is lack of resources in nearly all schools to produce integrated programs with a effectiveness above a critical threshold needed to produce measurable results. Another possibility is lack of careful planning at the school level. It may be necessary to coordinate and oversee specific guidance activies in a vigorous fashion to produce effects of specific activities that are consistent enough to be observed at the school level. If this speculation is correct, then use of some systems approach, such as the Career Planning Support System, might pay important dividends. Another possibility is that family influence on matters related to careers is so strong that guidance programs cannot penetrate it. The sociological literature on status attainment has documented repeatedly that parental influence on educational and occupational goals far exceeds the influence of school personnel and peers. These findings reinforce the informal observation that it is difficult for a guidance counselor to persuade an able youth from low-SES background to attend college or dissuade a student with average math ability from entering an engineering program if the parents are set on him or her doing so.

One central conceptual issue implied by this paper is how should the outcomes of careeer guidance be defined? The goals of guidance are expressed in diffuse terms and make use of what may be termed secondary or tertiary concepts, that is, concepts defined by other more fundamental concepts. The concept of realism of choice is an important case in point. It is defined by how well one's career plans match up to abilities, interests, and opportunities. The guidance evaluation literature typically attemps to get a direct measure of realism by using judges, for example. Here, we have defined realism by reference to the magnitude of the effects of ability indicators and occupational plans, for example, on educational plans. When realism is defined by reference to effects (e.g., regression coefficients), differential realism among individuals implies statistical interaction. This strategy is appealing for two reasons. First, it entails expressing the theoretical/conceptual scheme in structural equation form, thus making the theory more explicit than would otherwise be the case. Second, it reveals implications of the theory that can be tested on a number of data sets such as the HSB that were not collected for the express purpose of evaluating career guidance.

Although this paper does not support the contention that strong career guidance programs produce the intended effects on students, neither does it support the viewpoint of the critics of schooling--that career guidance tends to reinforce an inequitable transfer of status from parents to offspring. Thus, the present findings challenge the critics either to produce evidence contradicting the conclusions offered here or to identify mechanisms other than career guidance in schools that perform the key roles that the critics claim for schools. Certainly other mechanisms have been identified by the critics (e.g., curriculum tracking), but in view of the key function that career guidance ostensibly plays in slotting youth into career lines, it seems incumbent on the critics to explain why guidance does not have the impact that their critiques imply it should have.

REFERENCES


Alexander, Karl L.; Cook, Martha A.; and McDill, Edward L. "Curriculum Tracking and Educational Stratification: Some Further Evidence." American Sociological Review 41 (1978):144-152.

Alexander, Karl L., and McDill, Edward L. "Selection and Allocation within Schools: Some Causes and Consequences of Curriculum Placement." American Sociological Review 41 (1976):963-980.

Arminger, Gerhard. "Estimation of Parameters of Linear Stochastic Differential Equations and Their Covariances from Panel Data." Paper presented at the annual of meetings of the America[illegible]ociological Association, 1983.

Bell, Howard M. Mathching Youth and Jobs: A Study of Occupational Adjustment. Washington, DC: American Council on Education, 1940.

Bergland, Bruce W., and Lundquist, Ge[illegible] W. "The Vocational Exploration Group and Minority Youth: An Exp[illegible]ental Outcome Study." Journal of Vocational Behavior 7 (1975):289-296.

Borman, Christopher. "Effects of a Reinforcement Style of Counseling on Information-Seeking Behavior." Journal of Vocational Behavior 2 (1972): 255-259.

Bowles, Samuel, and Gintis, Herbert. Schooling in Capitalist America: Educational Reform and the Contradictions of Economic Life. New York: Basic Books, 1976.

Boyer, Ernest L. High School: A Report on Secondary Education in America. New York: Harper & Row, 1982.

Brenner, David, and Gazda-Grace, Patricia Ann. "Career Decision Making in Women As a Function of Sex Composition of Career-Planning Groups." Measurement and Evaluation in Guidance 12, no. 1 (April 1979):8-13.

Campbell, Robert E.; Connell, Janie B.; Boyle, Karen Kimmel; and Bhaerman, Robert D. Enhancing Career Development, Recommendations for Action: A Review of Empirical Studies of the Effects of Career Guidance. Columbus: The National Center for Research in Vocational Education, The Ohio State University, 1983.

Carey, Marsha A., and Weber, Larry J. "Evaluating an Experience-Based Career Education Program." Vocational Guidance Quarterly 27 (March 1979): 216-222.

Carnoy, Martin, and Levin, Henry M. "Introduction: The Limits of Educational Reform." In The Limits of Educational Reform, edited by Martin Carnoy and Henry M. Levin, pp. 1-22. New York: Longman, 1976.


BEST COPY AVAILABLE

Coleman, James S. "The Mathematical Study of Change." In Methodology in Social Research, edited by Herbert M. Blalock and Ann B. Blalock. New York: McGraw-Hill, 1968.

Davis, Jerry L., and Sanborn, Marshall P. "Getting Student Action on Guidance Goals." Journal of Counseling Psychology, 20 no. 6 (1973):209-213.

Doreian, Patrick, and Hummon, Norman P. Modeling Social Process. New York: Elsevier, 1976.

Dudley, Gordon A., and Tiedeman, David V. Career Development. Exploration and Commitment. Muncie, IN: Accelerated Development, 1977.

Flake, Muriel H.; Roach, Arthur J. Jr.; and Stenning, Walter F. "Effects of Short-Term Counseling on Career Maturity of Tenth-Grade Students." Journal of Vocational Behavior 6 (1975):73-80.

Frankel, Martin R.; Kohnke, Luane; Buonanno, David; and Tourangeau, Roger. Sample Design Report: A Report to the National Center for Education Statistics under Contract No. 300-78-0208 by the National Opinion Research Center. Chicago: National Opinion Research Center, 1981.

Ginzberg, Eli; Ginsburg, Sol W.; Axelrad, Sidney; and Herma, John L. Occupational Choice: An Approach to a General Theory. New York: Columbia University Press, 1951.

Goldberger, Arthur S. Econometric Theory. New York: John Wiley and Sons, 1964.

Grubb, W. Norton. "The Bandwagon Once More: Vocational Preparation for High-Tech Occupations." Harvard Educational Review 54 (4) November 1984:429-451.

Grubb, W. Norton. "The Phoenix of Vocationalism: Hope Deferred is Hope Denied." New Directions for Education and Work 1 (Spring 1978):71-89.

Grubb, W. Norton, and Lazerson, Marvin. "Rally 'Round the Workplace: Continuities and Fallacies in Career Education." Harvard Education Review 45, no. 4 (November 1975):451-474.

Grubb, W. Norton, and Lazerson, Marvin. "A Reply from Grubb and Lazerson." Harvard Education Review 46, no. 2 (1976):241-245.

Gysbers, Norman C., Moore, Earl J. Improving Guidence Programs. Englewood Cliffs, NJ: Prentice-Hall, 1981.

Hannan, Michael T., and Young, Alice A. "Estimation in Panel Models: Results on Pooling Cross-Sections and Time Series." In Sociological Methodology 1977, edited by David R. Heise, pp. 52-83. San Francisco, CA: Jossey-Joss, 1977.



BEST COPY AVAILABLE

Hanson, Jerrold T., and Sander, Daryl L. "Differential Effects of Individual and Group Counseling on Realism of Vocational Choice." Journal of Counseling Psychology, 20, no. 6 (1973):541-544.

Herr, Edwin L. "The Effects of Guidance and Counseling: Three Domains." In Foundations for Policy in Guidance and Counseling, edited by Edwin L. Herr and Nancy M. Pinson, (1982):155-184.

_____. Guidance and Counseling in the Schools: The Past, Present and Future. Falls Church, VA: American Personnel and Guidance Association, 1979.

Holland, John L. Making Vocational Choices: A Theory of Careers. Englewood Cliffs, NJ: Prentice-Hall, 1973.

Hotchkiss, Lawrence. Differential Equation Methodology Applied to Career Decisions and Status Attainment Processes: Conceptualization and Calculation. Columbus: The National Center for Research in Vocational Education, 1979.

Hotchkiss, Lawrence, and Chiteji, Lisa. The Dynamics of Career Expectations of Youth: A Theoretical Formulation and Empirical Report Based on a Longitudinal Study. Columbus: The National Center for Research in Vocational Education, The Ohio State University, 1981.

Jones, Calvin; Clarke, Miriam; Mooney, Geraldine; McWilliams, Harold; Crawford, Ioanna; Stephenson, Bruce; and Tourangeau, Roger. High School and Beyond 1980 Sophomore Cohort First Follow-up (1982). Chicago: National Opinion Research Center, 1983.

Jones, Calvin; Knight, Shirley; and Ingels, Steven. Administrator and Teacher Survey: Final Report. Chicago: National Opinion Research Center, 1984.

Krumboltz, John D., and Thoresen, Carl E. "The Effect of Behavioral Counseling in Group and Individual Settings on Information-Seeking Behavior." Journal of Counseling Psychology, 11, no. 4 (1964):324-335.

Lofquist, L. H., and Dawis, R. V. Adjustment to Work. Englewood Cliffs, NJ: Prentice-Hall, 1969.

Maola, Joseph, and Kane, Gary. "Comparison of Computer-Based Versus Counselor-Based Occupational Information Systems with Disadvantaged Vocational Students." Journal of Counseling Psychology, 23, no. 2 (1976):163-165.

Myers, Roger A.; Lindeman, Richard H.; Thompson, Albert S.; and Patrick, Theodora A. "Effects of Educational and Career Exploration System on Vocational Maturity." Journal of Vocational Behavior 6 (1975):245-254.

National Vocational Guidance Association Commission on Criteria for Career Guidance Programs. "Guidance Program." Vocational Guidance Quarterly 28 (December 1979(:99-110.

BEST COPY AVAILABLE

Oakes, Jeannie. "The Reproduction of Inequality: The Content of Secondary School Tracking." The Urban Review 14 (1982):107-120.

Oliver, Laurel W. Outcome Measures for Career Counseling Research. Alexandria, VA: U. S. Army Research Institute for the Behavioral and Social Sciences, Department of the Army, Augues 1978.

Osipow, Samuel H. Theories of Career Development, 3rd edition. Englewood Cliffs, NJ: Prentice-Hall, 1983.

Parsons, Frank. Choosing a Vocation. Boston: Haughton-Mifflin, 1909.

Rosenbaum, James E. Making Inequality: The Hidden Curriculum of High School Tracking. New York: John Wiley and Sons, 1976.

_____. "Track Misperceptions and Frustrated College Plans: An Analysis of the Effects of Tracks and Track Perceptions in the National Longitudinal Survey." Sociology of Education, 53, no. 2 (April 1980): 74-88.

Rosenfeld, Rachael A. "Race and Sex Differences in Career Dynamics." American Sociological Review 45 (1980):583-609.

Shertzer, Bruce. "A Counselor Lexicon: Purpose, Process, Practitioner." In Foundations for Policy in Guidance and Counseling, edited by Edwin L. Herr and Nancy M. Pinson, (1982):10-18.

Spokane, Arnold R., and Oliver, Laurel W. "The Outcomes of Vocational Intervention." Volume 2 of Handbook of Vocational Psychology: Applications, edited by W. Bruce Walsh and Samuel H. Osipow, pp.99-136. Hillsdale, NJ: Lawrence Erlbaum Associates, 1983.

Super, Donald E. The Psychology of Careers: An Introduction to Vocational Development. New York: Harper and Brothers, 1957.

_____. "A Theory of Vocational Development." The American Psychologist 8 (1953):185-190.

_____. "Vocational Development in Adolescence and Early Adulthood: Tasks and Behaviors." In Career Development: Self-Concept Theory. New York: College Entrance Examination Board, 1963.

Super, Donald E. "Vocational Development Theory: Persons, Positions, and Processes." In Perspectives on Vocational Development, edited by John W. Whiteley and Arthur Resnikoff. Washington, DC: The American Personnel and Guidance Association, 1972.

_____. "Vocational Maturity Theory: Toward Implementing a Psychology of Careers in Career Education and Guidance." In Measuring Vocational Maturity for Counseling and Evaluation, edited by Donald E. Super. Washington, DC: National Vocational Guidance Association, 1974.



BEST COPY AVAILABLE

Swails, Richard G., and Herr, Edwin L. "Vocational Development Groups for Ninth-Grade Students." Vocational Guidance Quarterly 24 (March 1976): 256-260.

Thoresen, Carl E., and Hamilton, Jack A. "Peer Social Modeling in Promoting Career Behaviors." Vocational Guidance Quarterly 20 (March 1972):210-216.

Thoresen, Carl E.; Hosford, Ray E.; and Krumboltz, John D. "Determining Effective Models for Counseling Clients of Varying Competencies." Journal of Counseling Psychology, 17, no. 4 (1970):369-375.

Trebilco, Geoffrey R. "Career Education and Career Maturity." Journal of Vocational Behavior 25 (1984):191-202.

U. S. Department of Health, Education, and Welfare. Work in America. Report of a Special Task Force to the Secretary of Health, Education, and Welfare. Prepared under the Auspices of the W. E. Upjohn Institute for Employment Research. Cambridge, MA: The MIT Press, 1973.

Warnath, Charles F. "Vocational Theories: Direction to Nowhere." The Personnel and Guidance Journal 53, no. 6 (February 1975):422-429.

Yates, Coy; Johnson, Norbert; and Johnson, Jerome. "Effects of the Use of the Vocational Exploration Group on Career Maturity." Journal of Counseling Psychology, 26, no. 4 (1979):368-370.

Zytowski, Donald G. "The Effects of Being Interest-Inventoried." Journal of Vocational Behavior 11 (1977):153-157.

BEST COPY AVAILABLE

CHAPTER 3

# DEVIANCE IN HIGH SCHOOL

Lawrence Hotchkiss and Linda Ebrst Dorsten

## Introduction

This chapter presents a study of the socialization of high school students. Primary attention is devoted to identifying factors that influence student deportment in school. By deportment we mean degree of conformity to school norms and rules. Factors such as truancy, tardiness, cutting classes, and refusal to do assigned homework comprise the operational definition of deportment. The paper also includes dropping out of school as an outcome, and for convenience, dropping out is referred to as part of what is meant by deportment and deviance. Interest in this topic is stimulated from two sources. First, an important aspect of employability development is learning to operate in a large organization according to rules stipulated by the organization (DiPrete, 1981; Hollenbeck and Smith, 1984). Secondly, a central hypothesis in the literature on effective schools is that an orderly disciplinary climate is essential to learning (Edmonds 1979; Clark, Lotto, and McCarthy 1980; Mackenzie 1983; National Commission on Excellence in Education, 1983). On the assumption that learning in school contributes to employability after leaving school, deportment should have an indirect as well as a direct effect on employability.

One of the most clearly-articulated propositions underlying the research on effective schools is that a safer, more disciplined, and more ordered environment provides better opportunities for student academic achievement than environments which are not so clearly defined (Coleman et al. 1982a, 1982b; Greeley 1982; Phi Delta Kappa 1980; Hoffer et al. 1985; also see Edmonds 1979; Austin 1980; Brookover et al. 1979; Clark, Lotto, and McCarthy 1980; Purkey and Smith 1983). One domain of this research focuses on academic success as a function of teacher actions, including commitment to and investment of time in teaching (Brookover et al. 1979), level of expectations of academic success transmitted to students (McDill et al. 1967; McDill and Rigsby 1973), and time spent in instruction (Wiley 1976; Wiley and Harnischfeger 1974; Denham and Lieberman 1980; Stallings 1980). A second domain for studies of achievement focuses on more broadly defined school organizational processes, such as school-level norms of high achievement and orderly student behavior maintained by the school teaching staff or principal (Phi Delta Kappa 1980; Clark, Lotto, and McCarthy 1980; Rutter et al. 1979; Coleman et al. 1982a; Greeley 1982; Hoffer et al. 1985). Those papers that proclaim that norms of orderly climate, school-level norms, and academic demand strongly influence student achievement comprise a particularly coherent body of opinion regarding the features most characterizing effective schools.

The view that disciplinary climate in a school has a primary direct influence on the achievement outcomes of the students is based largely on expert opinion (Edmonds 1979) or cross-sectional data (Coleman, Hoffer and Kilgore 1982). Cross sectional studies, case studies, and expert opinion rely implicitly or explicitly on the assumption that orderly behavior has a positive effect on achievement. It is equally plausible, however, that the academic

achievement of students in a school and the academic climate of the school determine student behaviors and disciplinary climate in the school. This point is made repeatedly in the quantitative literature (Elliott and Voss 1974; Greeley 1982; DiPrete 1981). DiPrete, for example, includes academic achievement as a predictor of school deportment, applying two-stage least squares to base-year High School and Beyond (HSB) data on the assumption that two directional effects are likely. To date, little empirical analysis with longitudinal data has been directed toward untangling the potentially complex feedback loops among student behavior and academic achievement variables.

The time is right to begin to untangle the process in a fundamental way, and this paper is intended to do just that. The paper merges thinking about schooling processes, empirical research on school organizational structures, and theory regarding adolescent delinquency to construct a theoretical model of the process. The model will be examined with High School and Beyond (HSB) data. Two hypotheses will be tested. Stated in their broadest form they are: (1) the hypothesis that academic demands and achievement affect student disciplinary behaviors, and (2) the hypothesis that a more disciplined and more orderly environment provides better opportunities for student achievement growth. Achievement is operationalized by using grades and math and verbal test scores, and several types of student behaviors important in prior research serve as dependent variables measuring disciplinary outcomes. These types of behavior are: (1) active student behaviors, for instance, whether the student is dynamically involved with the school environment (either by doing homework or by misbehaving, e.g., attacking teachers, fighting); and (2) passive or withdrawal behaviors (such as absence from class or school and dropping out of school). While other research has utilized theoretical arguments of deviance (DiPrete 1981; Stinchcombe 1964) or delinquency and dropout (Elliott and Voss 1974), the present study expands the level of knowledge about deportment and achievement by investigating linkages between delinquency, dropout, and academic processes, using longitudinal analysis to test the stated hypotheses.

The rationale for the hypothesis that academic demands and achievement affect deviance derives from prior research investigating various forms of high school student misbehavior and dropout as dependent variables (e.g., Elliott and Voss 1975; DiPrete 1981). The hypothesis of reverse direction effects is evident from research on academic achievement as a function of teacher actions and general school organizational practices. The deportment outcomes primarily investigated have been truancy (Rutter et al. 1979; DiPrete 1981; Fogelman et al. 1980; Karweit 1973); school vandalism and violence (National Institute of Education 1978; McPartland and McDill 1977; Allen and Greenberger 1978), student and teacher victimization (Gottfredson and Daiger 1979), student rebellion as seen in racial or ethnic group tensions or student protests (McPartland and McDill 1977), and alienation (Stinchcombe 1964; Garbarino 1978), and dropout (Bachman et al. 1971; Elliott and Voss 1974; Rumberger 1979; Gray, Smith, and Rutter 1980).

The shortcomings of past research on school outcomes that Rosenholtz (1985) and other reviewers have identified will be minimized in the present paper. These are: (1) Some studies do not control for confounding variables such as student SES. In the present study, student background characteristics will be included, along with student motivational and attitudinal variables. (2) The predominant use of elementary school studies raises questions about the

generalizability to high school populations. Furthermore, the focus is generally on urban elementary schools with successful reading/math programs in the lower grades (Purkey and Smith, 1983). Here, high school organizational characteristics, teacher actions and attitudes, school academic and disciplinary normative structures, and student involvement in extracurricular activities will be investigated. (3) Much research relies on case studies that cannot provide causal explanations or estimations of the relative importance of critical variables. Purkey and Smith (1983) point out that without longitudinal studies, random or nonrandom variations in schools cannot be controlled. Multivariate longitudinal analyses are required to disentangle the effects of numerous variables operating as a system.

## Empirical and Theoretical Context

This review begins with a summary of the empirical research that has been directed at identifying factors that influence student deportment in school. Most of this work has been atheoretical; hence, it does not provide a clear organizing framework. The work on crime and delinquency appears to be the only body of literature proposing theoretical perspectives that are pertinent to school deportment. Therefore, the major theoretical orientations in this literature are reviewed in this section. Finally, because of the expected two-directional effects between deportment variables and achievement in school, it is important to draw on research in educational effectiveness. The final section of this review summarizes that work.

### Research Findings: "Misbehavior" in School

DiPrete (1981) reports an extensive empirical investigation of school conduct that is closely related to the present study. Using base-year HSB data, he examines factors that influence a three-item scale indexing misbehavior. DiPrete acknowledges the probable feedback effects among some of his key variables, namely the index of misbehavior, grades in school, homework time, and current educational plans. In lieu of longitudinal data, he depends on econometric technique (two-stage least squares) for estimating the effects. Carrying out separate analyses by gender, DiPrete finds that:

1. Family income has a positive effect on misbehavior.

2. Both parents' presence in the home and parental monitoring of the youth help to discourage misbehavior.

3. The school percentage (sample average) of those who sometimes cut class has a positive effect on misbehavior. This effect is extremely strong.

4. Indicators of performance in school such as test scores, grades, and academic track tend to discourage misbehavior.

5. High educational expectations also discourage misbehavior.

All these results hold for both males and females.

The DiPrete report is, in many respects, competently executed, because it acknowledges the importance of embedding the study of misbehavior in the context of an ongoing process in which many variables are involved, uses advanced statistical technology to address knotty issues of reciprocal causation, and is properly guarded about the robustness of conclusions. Nonetheless, the study has important shortcomings. First, the dependent measure is a scale composed of the following three items: (1) cutting class (dichotomous), (2) whether the student reports having been in serious trouble with the law, and (3) whether the respondent perceives that he or she is viewed by peers as a "troublemaker." DiPrete justifies the use of this three-item index on the grounds that its components were the only items in the HSB data relating to misbehavior that exhibited "acceptable" scaling properties in the Guttman sense. The problem with the Guttman method is that it tends to select out items with skewed marginals (e.g., "in trouble with the law") irrespective of item context and inter-item correlation (average r among the three items is .133). The primary problem with combining those items into a single scale is that they do not reflect a clear unidimensional concept. Being in trouble with the law confounds lawbreaking behavior with apprehension by authorities. These are two quite different dimensions, as is clear in crime and delinquency statistics (e.g., Elliott and Voss 1974) and in careful theorizing (e.g., Ehrlich 1977). Further, being in trouble with the law is not confined to behaviors in school. That others view one as a troublemaker is not the same thing as violating school norms and rules. In fact this variable probably could best be used in an index designed to assess peer influences on deviance in school. The only measure of the three that is a relatively pure indicator of behavior in violation of school rules is the item on cutting classes. The High School and Beyond data do contain a number of direct indicators of failure to conform to school norms (e.g., truancy, tardiness, refusal to do homework).

The second difficulty with DiPrete's analysis is that it omits potentially critical independent variables from the model. The literature on deviance strongly indicates that peer pressures are critical determinants of misbehavior, yet no measure of peer associations or attitudes is included. Although school-level regressions reported later in the document indirectly assess peer influence (as does "class cutting context" at the individual level), the many direct measures of peer associations and attitudes in the HSB data are excluded. Other variables widely thought to affect deviant behavior also are excluded from the analyses. Examples include self-esteem, occupational goals, and participation in extracurricular activities at school.

The final problem with the DiPrete report is a function of the HSB data available to him. Cross-sectional data generally render assessment of feedback effects more difficult than longitudinal data.

DiPrete also carried out regressions using the school as the unit of analysis and five deportment outcomes--days absent but not sick, days tardy, percentage of students who cut class, percentage of students who don't do homework, and percentage of students who have been in trouble with the law. He finds that school structural variables, such as enrollment size, percentage female, percentage minority, and student-staff ratio, exercise generally small effects. Catholic schools tend to inhibit unexcused absence and cutting class.

Truancy and tardiness are higher in urban and suburban schools than in rural schools.

Empirical research on student delinquency in school contributes to knowledge about student deportment. In 1978, the National Institute of Education (NIE) published a study addressing the safety of staff and students in over 600 U.S. public junior and senior high schools. This report, called the Safe School Study, examined the characteristics of community crime levels; demographic as well as social, organizational, and resource characteristics of schools; teacher and administrator perspectives on school governance and climate; and student perceptions of school climate and socialization experiences. Outcomes were measures of violence in the school and levels of school property crime. Multivariate analyses indicated that somewhat different factors contributed to each outcome. Higher levels of school violence were related to elements within the school itself, such as reporting a higher percentage of males enrolled and requiring teachers to teach a greater number of different students. Interestingly, with other factors controlled, the percentage of low-ability students was actually negatively related to school violence in urban high schools, although the bivariate correlation was positive. School property crimes, on the other hand, were more likely to be associated with higher community crime rates and a higher percentage of students living near the school.

Several limitations of the NIE report have been advanced (Gottfredson and Daiger, 1979). (1) No tests of statistical significance were used, even for regression results. In addition, the study utilized small samples. (2) After the initial multivariate analysis, additional explanatory variables were added in a piecemeal fashion, without any attempt to untangle their effects. (3) No discussion was provided about variable measurement. Therefore, the precise meaning of each variable is unknown. (4) The causal order is suspect. For example, curriculum was shown to determine racial composition, which is not sensible.

In order to address these limitations, Gottfredson and Daiger (1979) investigated the effects of community, school, and student characteristics on student and teacher victimization and overall school disruption. They reported that teacher victimization rates are strongly tied to the poverty and unemployment rates in the surrounding community, particularly in urban areas. Student victimization, on the other hand, is less influenced by community characteristics and more influenced by school factors, such as a high proportion of male students and a large proportion of students at the lower grade levels. Gottfredson and Daiger point out the limitations of their own study, the most serious of which is the possibility that reverse or mutual causality contaminates the findings. For example, teacher-reported misconduct in classes could represent a consequence of school disruption as much as it represents a cause (p. 163). It is evident that longitudinal data and model specification are required to answer these questions.

Elliott and Voss (1974) followed ninth graders in metropolitan California schools until graduation or dropout. Data were obtained during each of the four school years, through student questionnaires. Other data gathered were from parent interviews, teacher evaluations of academic performance and social adjustment, school records (for I.Q. scores, test scores, and grades), police records for offender data about the students, and interviews of dropouts.

Elliott and Voss hypothesized that delinquent behavior and dropout are alternative responses to failure and alienation, that selective exposure to a particular behavior influenced the type of response generated, and that school was the most critical social context, even over home or community. Residual gain scores were computed as the difference between the observed time-two score and a predicted time-two score based on a regression of first scores on second scores in the general population. This procedure is used to control for prior delinquency, which can cause further delinquency, and also to provide for a causal argument between predictors and delinquency.

Elliott and Voss found that alienation, association with delinquent peers, and delinquent behavior were mutually reinforcing processes. Of particular relevance was the finding that delinquency was causally related to academic achievement (negatively) and parental acceptance (negatively). Parental acceptance was the more powerful predictor of delinquent behavior for females, whereas academic achievement was the more powerful predictor for males. Other predictors of delinquency for both males and females were school normlessness, association with delinquent peers, and commitment to peers. While academic failure and school normlessness were less powerful predictors than home context for females, none of the measures of home context were strongly predictive of male delinquency. Delinquency, the authors argue, is a way of dealing with degradation resulting from failure in school and rejection in the home.

For dropping out of school, academic failure and alienation from school were the strongest predictors, while parental acceptance was a relatively weak predictor. Exposure to delinquent friends was only weakly related to social class, but dropping out was strongly related to class. This finding suggests that students, particularly those of a lower social class, who have a weak commitment to parents and a strong commitment to peers are more likely to become delinquent and to leave school, regardless of whether direct forms of delinquent socialization occur with peers or not. Nonetheless, Elliott and Voss argue that academic failure plays an important role in determining delinquency as well as dropout.

In contrast, commitment to peers and association with delinquents showed independent causal effects on delinquency. In other words, the authors concluded that delinquent behaviors did not necessarily derive from association with those socially defined as delinquent, since the peer culture itself is oppositional to home and school commitments.

Consequently, when schools retain students, they subsequently experience higher rates of delinquency. Rejection, alienation, and increased probability of academic failure results for students not committed to school or family. Delinquency and dropout are often the outcomes. The study of Elliott and Voss therefore indicates that when marginal students are retained the school milieu must be modified. Otherwise, the probability of an increased percentage of students experiencing academic failure in the school rises. Furthermore, schools with students committed strongly to peer culture, schools where students are more likely to be exposed to a delinquent subculture but are not strongly committed to parental approval or academic demands, and schools with a higher percentage of male students may need to make the greatest modifications.

The Rutter et al. (1979) longitudinal study of London inner-city schools tends to support Elliott and Voss. Rutter and colleagues found that measured school functioning variables of teacher actions in lessons, academic emphasis, and student rewards and responsibilities in school, were causally related to the student outcomes of exam success, attendance, delinquency, and in-school misbehavior. Students who were drawn into academic and social activities in the schools had better exam success and better in-school behaviors.

Rutter et al. (1979) argued against the viewpoint that, in determining student behavior at school, the effects of I.Q. are more important than the learning processes that the school could implement. They did find, however, that both exam success and deportment tended to be better in schools with students of at least average intellectual ability. A follow-up of the Rutter et al. study found that absentees were not significantly less intelligent than regular attenders, although few poor attenders continued past the mandatory school-leaving age, even in groups with higher I.Q.s and exam scores (Gray, Smith., and Rutter, 1980). What Gray et al. do conclude is that, controlling for I.Q., critical differences in rates of absenteeism and achievement were due to school processes, e.g., academic emphasis (homework given, teacher expectations for academic success), teacher actions in lessons (time on topic, interaction with whole class versus individuals), rewards for good work, and responsibilities for school governance.

In a classic British study based on a full year of participant observation, Hargreaves (1967) points to the influence of academic and nonacademic "streams" or tracks. The system of streaming that Hargreaves observed generates two opposed subcultures. Delinquent subcultures, he argues, develop because motivation to work hard is reduced when students are not thought to possess sufficient ability or attainment to sit for exams relative to others who are thought capable. Hargreaves emphasizes that even participation in school social life, e.g., sports and music, differentiates the two groups. It is imperative, therefore, that models investigating student delinquency pay careful attention to the integrative mechanisms that are present or absent between the student and the academic and social systems. Placing restrictions on student integration into either system may lead to compensating behaviors that are likely to be oppositional to the norms and values of the school as an institution.

The importance of Hargreaves' study is that he develops an argument showing how the competitive structure of the school he observed was, in large measure, responsible for generating divergent subcultures. Students placed in the lower "streams" were thereby identified as being less worthy than those in the upper "streams." Moreover, students were segregated by "stream" in their classes and school-sponsored recreation. Thus, a sizable group of students who were publicly labeled as inferior was largely segregated from more "worthy" students by school policy. Hargreaves argues that these conditions lead to development of a peer subculture in opposition to values and norms espoused by school authorities. His data do show differences between youth of different age groups that support his interpretation, but he does not present data on changes in a single cohort over several years.

Liska and Reed (1985) use the Youth in Transition data to assess the effects of attachment to conventional institutions on delinquency. School and family are the two institutions they study. The paper develops a model of

delinquency in which delinquent acts and attachments are depicted as jointly determined. Using lagged values of the dependent variables as instruments in two stage least squares (according to procedures outlined by Kessler and Greenberg 1981), Liska and Reed present empirical findings of feedback effects among juvenile delinquency, attachment to school, and attachment to parents. The analyses are for males only and are split on race. Liska and Reed find that for whites, the following model holds (figure 3.1):

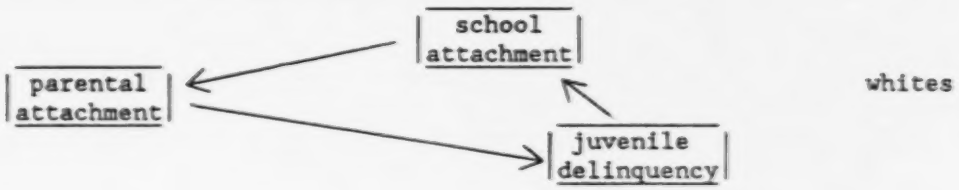


Figure 3.1. Liska and Reed model of delinquency: whites

For blacks, a different pattern was observed, as shown in the following model (figure 3.2):

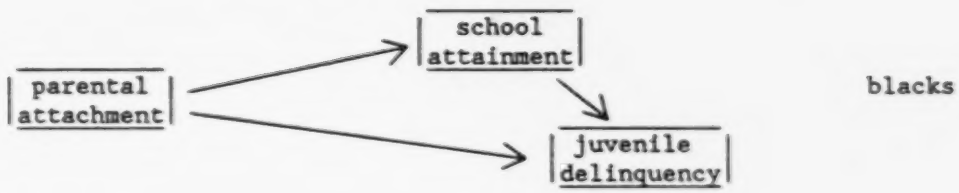


Figure 3.2. Liska and Reed model of delinquency: blacks

Although the primary dependent variables in the current debate regarding sector (Catholic vs. public) effects are test scores rather than deportment variables, the research presented in support of sector effects indicates that sector affects deportment. The basic argument here is that Catholic schools demand better deportment and more homework of their students than do public schools, and this accounts for the claimed superior performance of Catholic school students on test scores (Coleman, Hoffer and Kilgore 1982a, 1982b; Hoffer, Greeley, and Coleman 1985; Greeley 1982).

## Theories of Deviance and Related Theorizing

This section contains a brief review of individual, cultural, and societal explanations of misbehavior. The aim is to provide a framework for the fruitful intermarriage of theory and research which will allow development of models for the present study. The review is intended to begin organizing the various factors that contribute to deviant behavior and to point out that untangling the complex process contributing to student academic as well as deportment outcomes necessitates clear theoretical specification. Four broad viewpoints

are summarized: (1) differential association, (2) social strain or adaptation, (3) social control, and (4) economic theory.

Differential association, or cultural deviance theory, stems from the work of Sellin (1938); Sellin and Wolfgang (1969); Sutherland and Cressey (1955); Sutherland (1977); Elliott and Voss (1974); and Elliott, Ageton, and Canter (1979). These researchers investigated the relationship between delinquent behaviors evident in adolescents and the peer subculture in which the youth interacted and from which they subsequently developed congruent norms and values that were in violation of norms of the large society. The essence of differential association theory is that those who encounter deviance among people with whom they associate closely will themselves learn to be deviant. This view--that deviance is normatively determined--implies that, at the aggregate level, deviance occurs only when there exist two or more subcultures with competing normative structures (Kornhauser 1978; Sutherland 1977). The literature on delinquency strongly emphasizes the influence of adolescent peer groups on delinquent behavior (Cloward and Ohlin 1960; Sutherland and Cressey 1966; Cohen 1955), but associations with people other than age mates also may be important. Parental influence in particular has been emphasized (Sutherland and Cressey 1966; Jensen 1972). Parental influence, though, is seen primarily as an inhibitor of delinquency. It is the combination of alienation from the home and association with delinquent peers that produces delinquent behavior.

In summary, differential association models postulate that the primary foundation of social order is the internalization of shared norms (Kornhauser 1978:249). Without a common culture, subcultures emerge which define and produce order. The structures and subsequent order they produce are not necessarily directed toward deviance per se, however. Peer subcultures and their norms and values develop to define the emergent behavior, and the deviance that consequently emerges is secondary to the production of stable norms and values. Nevertheless, the deviance that is produced is transmitted to those subscribing to the group influences.

Unlike differential association theory, social adaptation theory or "strain" theory assumes that the definition of delinquency and the goal of delinquent control are uniform for all subgroups in society (Kornhauser 1978: 249). Therefore, delinquent behavior is the deliberate violation of norms to gain personal advantage. Merton noted that a society must provide opportunities to reach socially approved goals if people are to conform to its rules. Social integration and individual success occur when opportunities and needs are in equilibrium. Because action leading to success is made possible for certain social statuses and difficult or impossible for others, Merton's concern was directed toward determining how modes of adaptation between goals and means produced pressure leading to delinquency. Merton described five categories illustrating the relationships between goals and means; however, only three are concerned with deviance.[4] These three behaviors are innovation, retreatism, and rebellion.

Innovation describes the acceptance of cultural goals but not the culturally approved means to achieve these goals. Innovation often is presumed to be

[4]The other two categories, conformity and ritualism, are not considered socially deviant behaviors by Merton.

characteristic behavior of the disadvantaged. Students who perceive rejection may tend toward innovative behaviors (e.g., crime), whether the rejection is from lack of parental control (Jensen 1972), lack of school academic success (Hargreaves 1967), or lack of involvement in school activities (Karweit 1973; Rutter et al. 1979). Innovation is the primary aspect of Merton's work that is emphased in strain theories of delinquency.

Rebellion is a rejection of means and goals along with the advocacy of another set of goals and means. For students forced to remain in school, both truancy and lack of scholastic attainment may be manifestations of adaptive mechanisms toward school goals which do not seem to be attainable. Willis (1977) provides a unique look at the development of rebellious behaviors in working class students. Young working class males circumvent adoption of the school goals of academic success and activity in school life by producing their own future-oriented working class goals, while denigrating those who do conform to school life. Stinchcombe (1964) pointed out that students who did not perceive future status gains to be attainable through conformity to the school system tend to become rebellious, exhibiting what he called "expressive alienation," or actions meant to show others that what is being offered is not pertinent to them.

Retreatism signifies a rejection of both the means and the goals of society, often evident in passive forms of behavior. Students who reject the dominant roles and institutions of education may become apathetic and withdrawn (Kenniston 1965). Whereas temporary, nonillness absence from school or class may indicate innovation, rebellion, or retreatism, depending on the reason for absence, dropping out of school may be perceived as retreatist behavior. The disadvantages accruing to those who drop out are said to most negatively affect the future of lower SES students. Miller (1967) provides a fourfold typology of characteristics of the low-income dropout.[5] While inadequacies in I.Q. or emotional functioning lead some students to leave school, as do negative, boring school experiences, and personal and family troubles, the school-irrelevant dropout category includes the bulk of low-income dropouts. These individuals never expected to graduate, and do not adopt the "high aspirations" of schools as desirable over their own aspirations. Being required to remain in school, these youth may exhibit innovative or rebellious behaviors. Once they are able to quit school, they do so, since, as Miller points out, entry into high-level jobs does not seem to be any more likely with or without a high school education for these working and lower class individuals.

The previous statement provides an intriguing clue as to why schools may not be more successful than they are in promoting their goals of achievement and conforming behaviors: lower class dropouts from high school may not be any more disadvantaged in the workplace than those who obtain diplomas. This point is bolstered in a longitudinal study of the transition for males from school to work. The study concluded that dropping out of school did not necessarily lead to complete failure occupationally. Indeed, Bachman et. al (1971) reported from an analysis of high school students five years after high school that

---

[5]Middle class dropouts are not considered to be relevant to the economic and political perspective taken, and are not included in the typology. Miller suggests that middle class dropouts are marginal to the middle class, however.

dropouts earn a higher hourly wage than either high school or college graduates, but Rumberger (1980) concludes otherwise. Nevertheless, income may not be higher for dropouts if they work fewer weeks per year than nondropouts. Bachman et al. did find that dropouts experienced higher rates of unemployment, although Bachman and colleagues argue against uncritical acceptance of the premise that staying in school for 12 rather than 10 years significantly improves occupational success, ceteris paribus. Based on these findings, Bachman and his coauthors question the validity of antidropout campaigns which often exaggerate the post-high school plight of those who leave school early. Currently others are considering the merit of twelve years of school, provocatively suggesting that cognitive benefits may not accrue to students who remain in school over those who drop out (see Jencks 1985; Alexander and Pallas 1985).[6]

Social strain theory has been closely associated with the proposition that lower class individuals are more prone to deviance than are middle and upper class persons. The reason for this prediction is that lower class persons are presumed to accept the success goals of the larger society just as others do, but their means to achieve these goals are more narrowly restricted.

The basic premise of control theory is that the natural tendency of most individuals is to violate predominant social norms. This premise stands in contrast to the postulates in differential association theory and strain theory. These latter two theoretical viewpoints are based on the premise that most people generally follow prevailing norms and require some outside stimulus to induce them to do otherwise--pressures from close associates provide the stimulus in differential association theory, and the frustration of being closed out from achieving socially prescribed goals is the stimulus in strain theory.

In control theory, control mechanisms are necessary to induce conformity. The mechanisms are, however, diverse. They often are classified as internal to the individual or external (Reiss 1951; Nye 1958; Reckless 1967). Internal controls are beliefs held by individuals that prevailing norms are legitimate and therefore should be observed. Integration into a social system, as evidenced by attachment/involvement in conventional institutions, is a critical mechanism by which individuals learn to internalize prevailing norms and values. External controls are socially prescribed sanctions that are intended to inhibit violation of norms. Hirschi (1969) proposes that four social mechanisms are critical to establishing ties of individuals to the social norms. He uses the term attachment to indicate a sense of conscience, a belief that it is only right to obey the rules. The second factor in Hirschi's scheme is commitment. Commitment refers to the personal advantages that one achieves by working hard within the prescribed structure--such as income and prestige. Hirschi designates involvement to indicate time and energy commitment to socially approved activities. Finally, belief indicates acceptance of the prevailing norms as morally correct.

Conflict theory can be viewed as a radical variant of control theory (e.g., Spitzer, 1975; Chambliss (1973). Conflict-oriented writers argue that

[6]Alexander and Pallas take the statement seriously, and indicate that they are engaged in current research addressing just such a possibility.

forms of control emanate from compliance structures prevalent in society that are in the interests of the ruling class. These compliance structures shape the behavior and consciousness of parents who reproduce these control relationships with their children (Bowles and Gintes 1976; Carnoy and Levin 1976; Willis 1977; Colvin and Pauly 1984). Conflict researchers argue that coercion that attempts to produce compliance is the instigator of inequalities. The conflict perspective suggests that rule creators operate to preserve their own interests by not tolerating lower class misbehavior in the same way they tolerate middle class behaviors.

In the case of schools, compliance determines student outcomes by the limitations imposed on the disadvantaged. Conflict theories point out that the advantaged tend to receive differential treatment even though they commit misbehaviors similar to those who are disadvantaged. Goodlad (1982) reported from a study of elementary, junior and senior high schools across the United States that low-income and minority groups were disproportionately represented in the lowest curriculum tracks. Classes in which students were not tracked showed more similarities to classes in upper tracks than to those in lower tracks. Fogelman et al. (1980) reported that as many as eight weeks of absence per year did not lower test scores for upper-middle class students, and that a statistically significant relationship between absence and attainment was found only for students with fathers working in manual occupations.

Economic theory of crime and associated research tends to be ignored by scholars of crime and delinquency other than economists. Yet the economic theory is the most rigorous of the theorizing available on the subject and is consequently the richest in empirical implications. The fundamental assumption is that crime, or any violation of norms, is like any other activity, and people engage in antinormative behavior for the same reasons they engage in any behavior--because the balance of their personal costs and benefits favors it (Ehrlich 1979; Becker and Landes 1974). The most controversial implication of the economic view is that threat of punishment does indeed deter crime. The deterrence effect is controversial because the consensus among criminologists for a number of years has been that criminal behavior is not affected by threat of sanctions. In particular, the effect of the death penalty on the murder rate has been under contention in this regard.

The implications of the economic view are much richer than the hypothesis of deterrence, however. Ehrlich, for example, develops a formal model which predicts that the effect of apprehension is stronger than the effect of conviction, which is stronger than the effect of carrying out the sentence. He further predicts that rising income in a community accompanied by increasing variance in the distribution of income will stimulate property crimes. An important feature of the economic view is that crime stimulates expenditure on law enforcement, so that there is a feedback between enforcement and the crime rate. Crime is costly, but so is law enforcement. Hence, there may be an optimum level of resources devoted to law enforcement that will minimize the total resources lost to crime and to fighting crime. The potential application of this idea to institutions such as schools is clear.

Elliott and his colleagues present an important integration of strain, control, and differential association (learning) theory (Elliott and Voss 1974; Elliott, Ageton, and Canter 1979). The first thing Elliott and his collaborators do is strip strain theory of its implications that social class has a

negative effect on deviance. The evidence in recent years from self-reported deviance measures indicates little or no statistical relationship between class and deviance. The presumed relationship between class and deviance depends on the presumptions that success goals are uniformly distributed across social class, but the means to achieve those goals are not. For lower class persons, opportunities are restricted. Elliott and colleagues, however, argue that success goals also are positively related to class and that strain theory predicts that the discrepancy between goals and the perceived ability to achieve goals is the key stimulus to deviance. Hence, confirmation of strain theory does not require a negative effect of class on deviance.

The concept of social bond plays the central role in the theory advanced by Elliott, Ageton, and Canter (1979). Social bond refers to the ties of an individual to the conventional social order. The primary hypothesis drawn from control theory is that individuals with weak social bonds are prone to deviance, and those with strong bonds are insulated from deviance. Weak bonds may occur in adolescence because bonds never developed in childhood. Or, bonds that were strong in childhood may weaken in adolescence due to strain produced by the frustrations of failure in school, anticipated inability to achieve educational, occupational, and income goals, and a disorganized home. Individuals with weak bonds, however, are deviance prone but generally do not engage in deviance without support from a deviant/delinquent peer group. Elliott, Ageton, and Canter emphasize that the attitudes and behaviors of peers are crucial. Only if peers are deviant are strong ties to peers apt to produce deviance.

Tinto (1970) provides a review and synthesis of research on dropouts from higher education. His synthesis contains a detailed model that shows how interpersonal interactions develop over time to encourage or discourage commitment to the institution (see figure 3.3). The importance of the Tinto model lies in the fact that it allows for individual as well as institutional characteristics to interact simultaneously over time. Students who lack sufficient commitment to the goal of learning and/or the institutional goal of completing an education can become committed through interpersonal interactions with faculty or peers.

As indicated, Tinto includes parental background and institutional characteristics (e.g., public or private sector, size of institution and quality of the faculty), along with personal attributes of the student, namely, anxiety, egotism, impulsiveness, and past educational experiences. These variables produce types of initial commitments which later in college may be influenced by academically-related interactions with faculty and peers, such as discussions about majors, and social interactions (e.g., perceptions of friendship support by peers, subcultural associations, and participation in extracurricular activities). Tinto's model indicates that these factors in combination determine the integrative experiences an individual will have in the educational setting over time, which consequently determine degree of commitment to personal goals of the institution and influence decisions of persistence in or withdrawal from school.

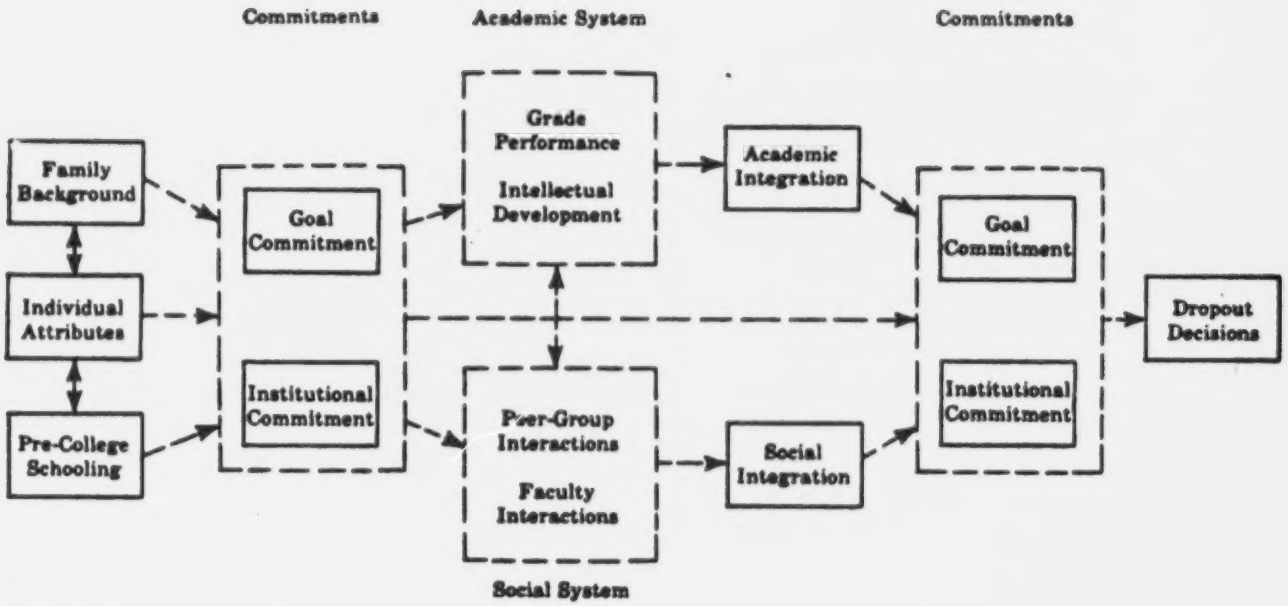


Figure 3.3. A conceptual schema for dropout from college

The advantages of the Tinto model over other models of dropout are that (1) the model provides a longitudinal empirical framework, and (2) the model encompasses characteristics of the educational institution that can provide the individual with adaptive procedures for overcoming low initial commitments, in effect tying the individual's fate more closely to the institution. For example, a student with a low level of goal commitment (educational or occupational aspirations) can benefit from association either with peers who value academic success or with faculty outside class about educational concerns (high institutional commitment). The individual involved in interactions of this type becomes academically integrated and will be less likely to drop out due to academic dismissal or voluntary withdrawal. Conversely, a student who has a high goal commitment but a low institutional commitment and develops either peer or faculty social interactions will be less likely to voluntarily withdraw or transfer than if peer or faculty contacts are absent. Since goal commitment is more important than institutional commitment for persistence in school, and goal commitment is more likely to occur as a result of academic interactions than is institutional commitment from social interactions. Nevertheless, the model does indicate that congruency (person-role fit) with the system can be developed through socialization, and suggests that individual needs can be met by specific interpersonal interactions in the educational system.

## Research Findings: Cognitive Achievement in School

The feedback effects found among misbehavior, grades in school, homework time, and current educational plans indicate that research findings on factors

BEST COPY AVAILABLE

influencing student cognitive achievement must be examined along with those pertinent to school deportment. Many studies that report significant positive effects of the school academic climate or "press" (e.g., Brookover, et al. 1978; Phi Delta Kappa 1980; McDill and Rigsby 1973) also report a concomitant school emphasis on a quiet and orderly atmosphere (Anderson 1982:403). Unfortunately, few longitudinal studies of student achievement exist, so that most findings are drawn from cross-sectional data, leaving studies open to the charge that between-school differences reflect student ability differences at intake (Alexander, McPartland, and Cook 1981; Heyns 1978; Murnane 1975; Rutter et al. 1979). This limitation must be kept in mind in assessing the research findings.

To date, a much broader range of factors influencing student achievement has been identified than for other outcomes. Therefore, as an organizing strategy, the basic framework for the discussion in this section is drawn from the critical review of effective schools research provided by Averch et al. (1974). This review, undertaken for the President's Commission on School Finance, organizes the findings from this body of literature according to approaches to educational effectiveness. The five approaches found are: (1) input-output studies, (2) schooling process studies, (3) case studies of organizations, (4) studies evaluating school interventions, and (5) experientially-based studies. The present discussion utilizes the first three types of study. Due to the large body of literature from school effects research specifying important effects of school climate on student achievement, conclusions drawn from these three approaches are augmented by a discussion of studies investigating school climate. Much of this latter discussion follows a recent comprehensive review of school climate at the school level (Anderson 1981).

Input-output studies. Input-output studies focus on the sources of achievement which reflect differences in school system attributes and use production functions to describe the relationship between inputs and outputs. Averch et al. (1974) describe two broad types of input from their review: (1) those pertaining to students; and (2) those pertaining to schools. Student characteristics include background (socioeconomic status, family size, and sex of student), school-related student characteristics (racial, ethnic, and socioeconomic composition, school attendance), and student attitudes (locus of control, self-concept, academic aspirations). School characteristics are: school conditions (e.g., class size, staffing ratios, number and type of physical school resources) and characteristics of instructional personnel (e.g., teacher educational and experiential background, and ascribed status characteristics, such as sex and race).

Overwhelmingly, student background factors have been found to have more effect on student achievement than school characteristics. Nevertheless, critics of input-output studies question these findings. Arguments leveled against these studies include: (1) Achievement is determined by tests that may not measure what is taught in school, therefore biasing the outcomes in favor of background characteristics (Alexander, McPartland, and Cook 1981; Rutter et al. 1979). (2) Most input-output studies are atheoretical, leading to probable specification error in the models. (3) Inputs and outputs may interact in complex ways, as found by others reviewing this group of studies (Glasman and Biniaminov 1981).

BEST COPY AVAILABLE

Schooling process studies. Process studies of education identify the characteristics of dynamic relationships between students and teachers, and among students. The Averch et al. (1974) review locates three types of inputs describing the analyses of social systems and their relationships: (1) classroom teaching methods, (2) teacher characteristics and attitudes, and (3) student characteristics.

Findings from studies of classroom teaching methods (e.g., behavioral studies and use of programmed instruction) do not significantly inform the research on student achievement (Averch et al. 1974). Only teacher characteristics and attitudes indicative of "quality of instruction" play a part (e.g., clarity, degree of task achievement and orientation, student opportunity to learn criterion material). Purkey and Smith (1983) concur with Averch and coworkers; in a thorough review and evaluation of process studies, they found that a strong emphasis on basic skills, time spent in basic skills, and monitoring student progress were teacher characteristics consistently associated with effective schools.

Student characteristics of relevance are those associated with ability or I.Q. measures. Achievement in a given subject area is argued to be a better predictor of later achievement than a measure of general ability, however (Madaus, Airasian, and Kellaghan 1980:100). Averch et al. caution that interactions may occur between ability and instructional practices. Recent research suggests that certain personality characteristics play some part in determining cognitive achievement, particularly achievement motivation related to parental and social rewards and punishments.

Criticisms also have been directed toward schooling process studies. These criticisms include:

1. Like input-output studies, longitudinal studies are rare.

2. The sample of schools has been too narrowly confined to urban elementary schools (Purkey and Smith 1983).

3. No widely published studies have examined schools with explicit improvement programs (Purkey and Smith 1982).

4. Research methods tend to be weak, due to small, unrepresentative samples and limited use of multivariate analyses.

Most important, causality between school characteristics and student achievement is undefined, as it is unclear in these studies whether process characteristics (e.g., degree of teacher achievement orientation) are antecedent or consequent to student achievement.

Organizational studies. Organizational studies of schools in the past have relied primarily on case studies (Averch et al. 1974). Conclusions from these earlier studies indicate that large bureaucratic school structures decrease teacher innovation and increase the impersonal nature of treatment of students, partially due to reliance on a large number of school rules. Consequently, the main conclusion drawn from these earlier studies is that larger schools may produce difficulty in dealing with a changing clientele and in retaining innovative teaching strategies (Averch et al. 1974).

School climate studies. While Averch and colleagues (1974) do not find evidence of "student body" effects to be convincing in affecting student achievement, recent research has replaced these broad general measures with more direct measures of student body. Anderson (1981) provides a thorough review of the research on school climate. Although she notes that in school climate research, definitions vary and arguments abound as to what theoretical basis, variables and unit of measurement produce the most valid findings, she does find some common conclusions. To undergird her review she adopts a definition of climate defined as environmental quality assessed in four dimensions: (1) the ecological (physical and material variables), (2) the milieu (variables representing average background characteristics of individuals in the school), (3) the social system (variables that concern patterns of rules for school operation and interaction, and (4) the culture (variables that reflect norms, belief systems, cognitive structures, and meanings of individuals in the school).

Ecological climate variables have been discussed above in the input-output effectiveness studies (e.g., school building characteristics, school and class size). Their effects, however, may affect achievement through other dimensions of the school climate (e.g., the subjective effect of school size on achievement through the rigidity implied by a high number of school rules). Like the ecological research, studies examining characteristics of the school milieu have largely been discussed in input-output and schooling process studies. Additional evidence from the school milieu suggests that both teacher and student morale affect students' cognitive achievement (e.g., teacher satisfaction and attitudes toward work; student academic self-concept and sense of alienation).

By far, the two most important dimensions of school climate affecting achievement are those discussed in the social system and cultural frameworks. A variety of measures of each dimension consistently have been reported, some of which overlap with the studies of schooling processes. Important social system variables for achievement outcomes are positive and rewarding teacher-student relationships, type of instructional program, placement in an accelerated and flexible curriculum, student participation in school-related activities (and success in these activities), positive staff interrelationships (cooperation and good communication between staff members, involvement of the principal in instruction), and good parent-staff relationships.

Relevant cultural characteristics are also numerous; however, the overarching measures of school culture determining student achievement are those emphasizing academic excellence or "academic press." These measures are also associated with schools in which quiet and order are stressed (Anderson 1982: 403). Other consistently important cultural variables include those representing school-level expectations held by staff for both students and other staff, the use of rewards and praise for student academic accomplishments, a sense that teachers care, and consistency and consensus of rules and values for both achievement and discipline.

## Theoretical Framework

Obviously there is no ready-made rigorous theory of the processes that generate "misbehavior," or its converse "good citizenship," in school. It is nevertheless useful to draw on available informal theory as a way to impose an organizing framework on the myriad of factors that may be involved in the process of generating misbehavior. We begin with a discussion of the concept of misbehavior and its concrete meaning in the current study. A clear view of the meaning of the primary outcomes helps to sharpen the subsequent review of relationships involving those outcomes.

### Dependent Variables

The idea of misbehavior in school is a special case of the more general concept of deviance. The term deviance implies deviation from something; in the present context it means behavior that deviates from prevailing norms. Thus, deviance must always be defined in reference to a specified standard of behavior. Since behavior standards may not always be clear, due to disagreement regarding their desirability, conformity may not always be easy to distinguish from deviance. One aspect of deviance is clear, however; it refers to individual behavior. It therefore should not be confused with apprehension or sanctions as is done implicitly when "contacts with police" are used as dependent variables in the crime and delinquency literature. The importance of this point has become increasingly clear in recent years and reliance on self-reported deviance has become the primary standard.

In the current study, deviance is defined by reference to relatively universal institutional norms of schools. In selecting measures of school deviance we have adhered strictly to indicators of behavior regarding conformity to institutional school norms. There are a number of measures in the High School and Beyond (HSB) data that are closely related to deviance or conformity. These are: (1) truancy, (2) tardiness, (3) cutting class, (4) coming to classes without paper or pencil, (5) coming to classes without one's books, (6) coming to class without having completed one's assigned homework, (7) dropping out of school, (8) hours of homework done per week, (9) having "disciplinary problems in school," (10) having been in trouble with the law, and (11) having been suspended from school. Of these 11, only the first 8are clear measures of behavior. The rest are direct measures of sanctions, though they probably also reflect deviance. Additionally, the number of hours spent per week on homework is an inadequate measure of deviance (conformity) because no information is available about the amount of homework assigned to each respondent. The list is therefore narrowed to seven items.

Of those remaining one may doubt the inclusion of dropping out of school as a measure of deviance, because the norm stipulating that youth should remain in school is not sufficiently strong. Yet in the contemporary United States, the norm does appear quite strong that youth should earn a high school diploma. Further, theories of deviance appear to apply to dropping out of school in the same manner that they apply to other forms of deviance in school (Elliott and Voss 1974). The final list was narrowed to five by combining items 4, 5, and 6 into one index that measures propensity to come to classes unprepared. In summary, the indicators of school deviance used in this study are--

- o truancy--absence from school when not sick;
- o tardiness to school;
- o cutting classes;
- o coming to classes unprepared--without paper or pencil, without books, and/or without assigned homework completed;
- o dropping out--leaving school without a high school diploma.

Classification of Independent Variables

Theories of deviance suggest eight broad categories of factors that influence deviance/conformity. These are: (1) background and demographic variables, (2) aspirations, (3) achievements, (4) institutional integration, (5) personal commitment, (6) psychological stress, (7) "differential" associations with peers, parents, etc., and (8) sanctions. Additionally, the literature on school effectiveness suggests that a large number of features of schools affect achievement and are closely related to an "orderly climate." Of these, the class of variables broadly termed "school climate" appears to be most important. Finally, theories and research on formal organization (bureaucracy) imply that "structural" features such as size of student population and composition are important.

The content of some of these categories is not entirely apparent from the title. The following list, therefore, indicates examples of the variables used in the present study in each category.

- o Background and demographic variables--parent's education, parent's occupation, family income, race, ethnicity, gender
- o Aspirations--educational expectation, occupational expectation, parental educational expectation of the youth
- o Achievements--grades in school, verbal/math test scores, academic track
- o Institutional integration--
  --At school: participation in extracurricular activities
  --In the community: religion, whether a "religious person"
  --At home: parental monitoring of school work, parental knowledge of youths' whereabouts
- o Personal commitment--likes school, satisfied with school, work values, community values, family values, locus of control
- o Psychological stress--self-esteem, depression, feeling of being unattractive
- o Differential association--

--Peers: time spent visiting with friends, time spent talking on phone with friends, time spent "driving around," friends' attitude toward a good student
--Home: time spent with parents

- Sanctions--student perceptions of enforcement of a list of rules (no smoking, students held responsible for property damage at school, dress code, hall passes)

- School climate--teacher emphasis on hard work and standards of excellence, teacher belief in student ability, teacher reports of disciplinary matters in their classrooms and school, rewards for achievement

- School "structure" and context--size of student population, percentage of students female, percentage of students minority, percentage of graduates who attend college, presence and enforcement of rules

Inclusion of background variables as "controls" has become almost obligatory in social research. In the present case, however, strain theory provides explicit rationale for their inclusion. Those with low-status profiles should, in theory, experience restricted access to universally desired goals. They are therefore likely to resort to deviance (1) as an alternative means to achieve their goals (e.g., theft, cheating on an exam), and (2) out of frustration.

Strain theory also indicates that achievements and aspirations combine to produce deviance. It is the discrepancy between achievements and aspirations that should produce deviance.

Control theory provides the primary justification for including measures of institutional integration and personal commitment. The theory indicates that integration is a critical control mechanism. Individuals who become involved or integrated in institutional functions are taught to internalize institutional norms. Association with others as part of this integration provides a means to sanction behavior that is not approved. Personal commitment is predicted to be an outcome of integration.

Psychological stress is included on the presumption that it is the natural result of discrepancy between goals and achievements. Inclusion of association with peers and parents is a direct implication of differential association theory.

Economic theory implies that we need to have measures of individuals' view about the likelihood of being sanctioned for specific acts of deviance and their view of the severity of the possible sanctions. Such data are rare, and they are not present in the HSB data. In lieu of this type of detail, individual perceptions of enforcement of school rules and student views of effective and fair discipline are included.

The school climate variables are included on the premise that school policies and processes that affect academic achievement also are likely to influence deportment. The basic idea here is that a businesslike emphasis on

the tasks at hand, adherence to high standards, and similar aspects of climate tend to stimulate students to conform to school behavior codes.

In theory, school structure influences behavior indirectly. For example, size of the student population affects participation in extracurricular activities--as size increases participation decreases (Morgan and Alwin 1980). Also, large size may generate impersonality which affects feeling of belonging. Compositional variables such as percentage of graduates who attend college may influence student behavior by affecting the probability that a given student will be exposed to opinions and behaviors that favor college attendance, cutting classes, and other deviant behaviors at school.

## Model

Although school deviance is treated in this paper as a set of dependent variables, one of the most strongly emphasized points in the literature is that deviance/conformity, and the factors that influence it are involved in a complex process of causal feedbacks (Diprete 1981; Elliott, Ageton, and Canter 1979; Elliott and Voss 1974; Ehrlich 1979; Matsuada 1982; Colemen, Hoffer, and Kilgore 1982; Greeley 1982; Hawkes 1975). Sanctions, for example, presumably impede deviance, but deviance stimulates sanctions (Ehrlich 1979; Hawkes 1975). Similarly, achievement in school influences deportment in school, but deportment also presumably affects achievement (DiPrete 1981; Elliott and Voss 1974). Other factors also probably are part of a system of feedback effects involving deportment. Liska and Reed (1985) report models in which attachment to school, attachment to home, and misbehavior are depicted as part of a system of feedback effects.

Of the several categories of variables summarized in the preceding section of the paper, only background and demographic variables are unambiguously exogenous to the rest. However, the influence of each individual student on school variables such as those categorized as climate and structure probably is sufficiently small so that it can be ignored. Bidirectional effects cannot be ruled out unambiguously in the pairs of variables that are classified into the remaining categories. Neither can feedback effect among the five deportment variables be ruled out a priori; in fact, such feedbacks seem quite likely to occur. Figure 3.4 shows a stylized representation of these relationships.

Although none of the effects among the endogenous variables can be dismissed a priori, theory indicates that some pathways predominate. Strain theory in its early formulation emphasizes the effect of socioeconomic background. Differential association theory emphasizes the impact of peer associations on deviance. Control theory emphasizes the control mechanisms that operate more strongly when one is integrated into an institution. Both control theory and economic theory emphasize the importance of sanctions. Elliott and Voss (1974) and Elliott, Ageton, and Canter (1979) propose a multiple-sequence pathway leading to deviance. In their view, peer subculture is an important intervening mechanisms between strain and deviance. Strain produces stress that makes one seek peer support and renders one vulnerable to peer influence.

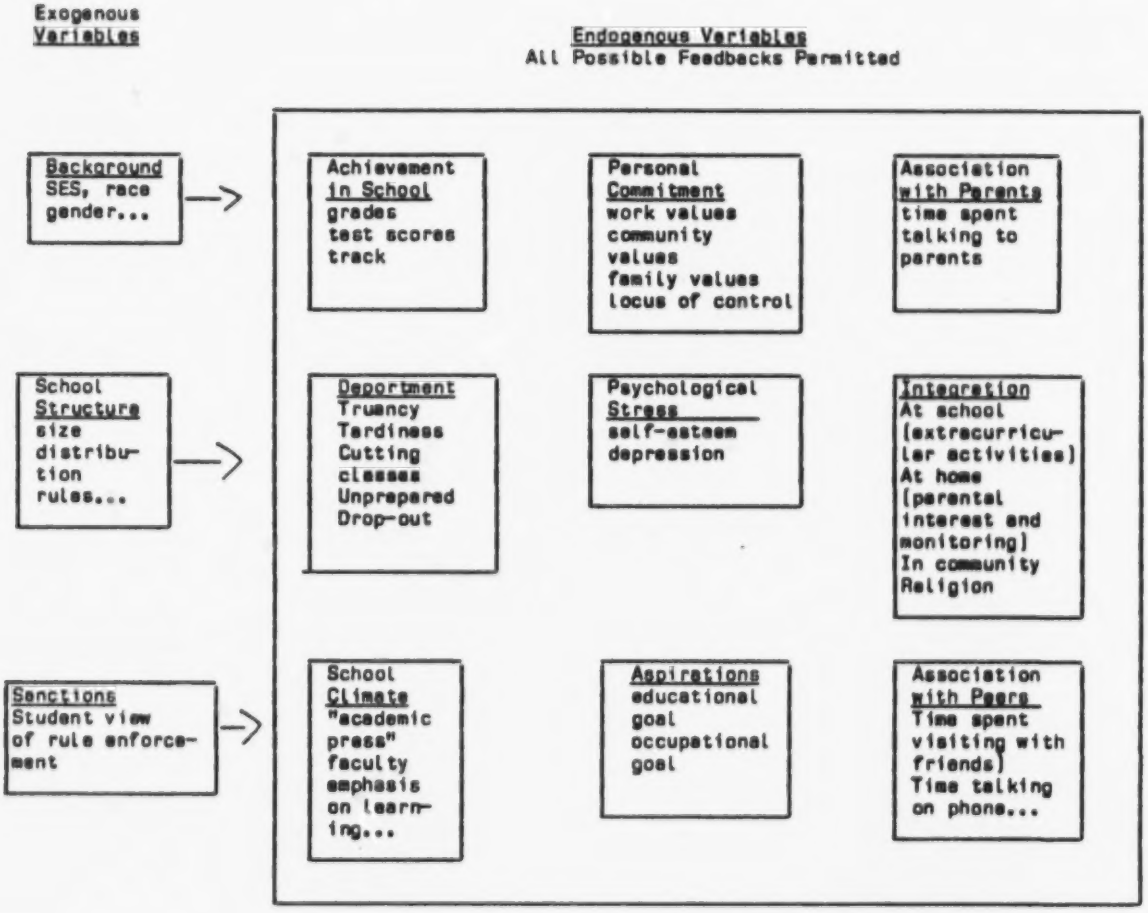


Figure 3.4. Schematic view of relationships among primary categories of variables



BEST COPY AVAILABLE

Elliott and his collaborators also emphasize that goals such as high occupational status, high income, and college education may be embraced differentially by different individuals rather than accepted uniformly across socioeconomic levels. This view implies that middle and upper class persons may experience as much strain as lower status persons. This argument is proposed as an important explanation for the lack of empirical evidence supporting the hypothesis that socioeconomic status influences deviance. The idea that the discrepancy between goals and achievements plays a key role in the etiology of deviance is not easy to test empirically, however.

Substantial debate exists in the literature on methods for testing hypotheses about effects of social mobility and "status crystallization" (Lenski 1954, 1964; Blalock 1966, 1967; Hope 1975; Hotchkiss 1985). The essence of the problem is the difficulty of separating out the effects of the components of a discrepancy--in this case, aspiration and achievement--from effects of the difference between the two. In this paper, we follow Hotchkiss (1985) and define a discrepancy effect to be indicated when the effect of one independent variable (aspiration) is positive and that of the other (achievement) is negative. In the ideal case where both independent variables are measured on a common scale, the absolute value of the two coefficients would be equal. For the present case, assume a linear relation such as--

$$\text{deviance} = a + b_1 (\text{asp.}) + b_2 (\text{ach.})$$

where asp = aspiration, ach = achievement, $a_1$, $b_1$, and $b_2$ = constant. If $b_2 = -b_1 = b_1$ then this expression simplifies to

$$\begin{aligned} \text{deviance} &= a + b (\text{asp} - \text{ach}) \\ &= a + b \cdot \text{strain} \end{aligned}$$

In most practical circumstances, however, it is too much to expect that $b_2 = -b_1$, exactly. For one thing, aspiration and expectation seldom are scaled the same. We therefore propose that a sign reversal between $b_1$ and $b_2$, with $b_1 > 0$, be taken as support for the view that the discrepancy between aspiration and achievement affect deviance. The following interpretation of this circumstance is advanced:

$$\begin{aligned} y &= a + b(\text{asp} - k\ \text{ach}) \\ &= a + b_1\text{asp} + b_2\text{ach} \end{aligned}$$

with $b = b_1$, $b_2 = -kb$, and $k > 0$. In this case $b_1$ and $b_2$ exhibit opposite signs ($b_1 b_2 = -b_1^2 k < 0$).

With this background in mind, one salient pathway to deviance stands out. This pathway is depicted in figure 3.5 below.

BEST COPY AVAILABLE

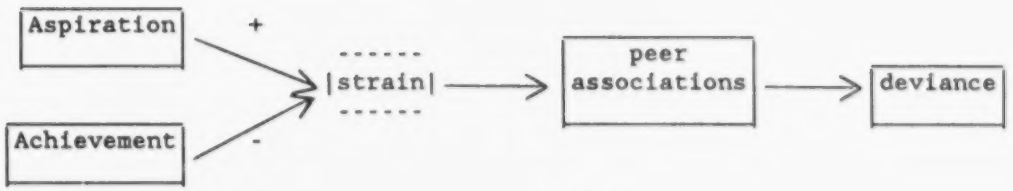


Figure 3.5. Difference model of strain hypothesis

The broken line around "strain" indicates that strain is unmeasured. One might take psychological stress as a direct measure of strain, however, and propose the following empirical realization of the theory (figure 3.6):

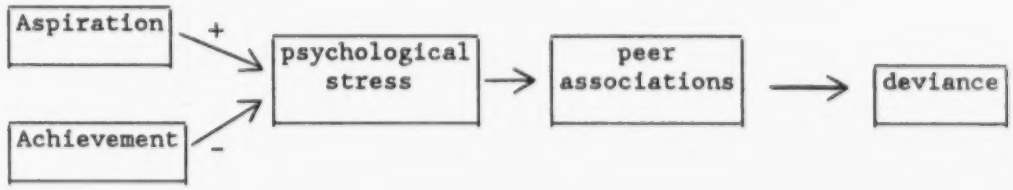


Figure 3.6. Psychological stress as an intervening variable in the strain model

In the early formulations of differential association theory, the focal variable was the ratio of attitudes favorable to deviance to those unfavorable (Sutherland 1947; Sutherland and Cressey 1970). Such attitudes were hypothesized to be learned in social settings, and peers were viewed as particularly potent sources of attitudes favorable to deviance. Family was assumed to be a source of unfavorable attitudes. Given this view, association with some peers should be more likely to foster deviance (attitudes favorable to deviance) than association with other peers. This suggests that the impact of peer associations on deviance strengthens as peers with whom one associates disagree with institutional norms and values; hence, a hypothesis of statistical interaction is inferred. The following model reflects this view:

$$\text{deviance} = a + b_1\,(\text{peer time}) + b_2\,(\text{peer conformity}) + b_3\,(\text{peer time}) \times (\text{peer conformity})$$
$$b_3 < 0$$

where "peer time" = time spent with peers, "peer conformity" = peer support of conformity with school norms; and a, $b_1$, $b_2$, and $b_3$ = constants. Differentiating with respect to peer time, one finds that the effect on deviance of time spent with peers decreases as peer support for conformity increases (since $b_3 < 0$)--effect on deviance of time with peers = $a + b_1 + b_3$ (peer conformity)

## Analysis

The statistical analysis in this chapter is based on the cross lagged regression method. All the dependent variables are measured at time two and all independent variables are measured at time one. Lagged values of endogenous variables are included as regressors in the full models, but not in the reduced form models.

There is no fully established approach for analyzing longitudinal data, and other researchers rely on different methods. Liska and Reed (1985), for example, use both the cross-lagged method and a method based on two stage least squares in which lagged dependent variables serve as instruments. They cite Kessler and Greenberg (1981) in support of the latter procedure, and report results only based on those calculations. Recently, Liker, Augustyniak, and Duncan (1985) published a piece in which they argue that both independent and dependent variables should be defined by the difference between time two and time one measures. In this methodology, changes in independent variables are used to predict changes in the dependent variables. One ostensibly attractive feature of this differencing methodology is that all variables that do not change between measurement points are "differenced out" and need not be included as controls in the calculations. In a now classic paper Duncan (1969) discusses models in which both lagged and contemporaneous values of endogenous variables are included on the right side. He concludes that identification frequently may be a problem with this type of specification.

The rationale for selecting the cross lagged method in this paper is that it can be derived rigorously from an explicit model of change over continuous time. The change model is expressed by a system of simultaneous linear differential equations. A more complete description and justification of the methodology is given in the chapter in this document on the effects of guidance.

Briefly, the basic point is that the variables which are to be studied here are part of a process that unfolds over continuous time. The measures we take of those variables are analogous to snapshots taken of the same scene but spaced at wide intervals. The times at which measurements are taken are largely arbitrary with respect to the process under study. Hence, in order to make sense of the data, it is necessary to rely on a model that expresses our best judgments about how the process does, in fact, operate during the time between measurements. In order to test the model, ultimately one must evaluate the forecasts that can be made from it.

Other methods of handling panel data are not derived from an explicit model of how the variables change between measurement points; hence, it is impossible to assess what they do imply about the process, and it is impossible in principle to evaluate them against forecasts. The difference methodology, for example, is based explicitly on a cross sectional model that is invariant over time. As shown by Coleman (1968) in one of his seminal works on analysis of change, cross sectional models can be viewed as manifestations of dynamic systems that have reached equilibrium (i.e., no longer changing). Under the equilibrium assumption a difference methodology such as that advocated by Liker and his coauthors generates undefined regressions because all the difference variables would be identically zero.



BEST COPY AVAILABLE

There are, however, other ways to justify a difference model. One obvious example is--

$$dy/dt = a_1 + b_1 dx/dt$$
$$dx/dt = a_2 + b_2 dy/dt$$

This model does indeed generate the difference equations advocated by Liker and his coworkers, and it expresses a model about processes over time. The model is, however, simplistic to the point of being trivial. It can be rewritten in the following form:

$$dy/dt = p$$
$$dx/dt = q$$

with $p = (a_1 + b_1 a_2)/(1-b_1 b_2)$, and $q = (a_2 + b_2 a_1)/(1-b_1 b_2)$. This result indicates that the rate of change in both x and y is constant over time. Since this hypothesis is a special case of the general linear differential equation system with constant coefficients that we rely on in this paper to justify the cross lagged regressions, a test of the simple difference model is implicit in the cross lagged methodology. The solution to the above pair of equations is:

$$y_t = y + p\Delta t \qquad \Delta t = t_2 - t_1$$
$$x_t = x + q\Delta t$$

Thus the difference model implies that all coefficients in a cross lagged model are zero except the coefficient on the lagged dependent variable, and the coefficient on each lagged dependent variable is equal to 1.0.

All this is not to argue that there are no problems using the cross lagged regression approach. The primary problems are statistical rather than conceptual, however (see, e.g., Hannan and Young 1977)

The calculations for the regression analyses were carried out with data for which mean values were substituted for missing information. While this procedure does generate biased and inconsistent estimates of coefficients, there are four point that favor the use of mean substitution in the present analyses. First, experience suggests that differences between results, based on mean substitution and other practical methods such as "linewise deletion" of cases or "pairwise deletion" generally are small. Second, calculating algorithms are much more efficient when no checking for missing data is required. For a large data set (with both many cases and many variables) this is an important consideration. Third, linewise deletion is entirely impractical when using as many variables as are used in the present study, because it eliminates too many cases (undoubtedly well over half in the present circumstances). Finally, the algebra of regression analysis is not valid when the pairwise deletion method is used. Ordinarily it gives a close enough approximation when the sample size is large, but the experience of the present writers is that when product variables are included, as is the case in this paper, the pairwise method is more likely to yield poor results than are the other methods.

## Data

### Sample

The data used in this paper are part of the High School and Beyond data base. The High School and Beyond (HSB) survey was sponsored by the National Center for Education Statistics, and the data collection was carried out by National Opinion Research Center (NORC). The HSB is a major longitudinal survey of high school youth. Base year data were collected in 1980, the first follow-up was completed in 1982, and the second follow-up was conducted in 1984. Plans call for additional follow-ups at 2-year intervals. The base year survey contains data describing over 58,000 student respondents, split between students who were sophomores (N = 30,030) in 1980 and those who were seniors (N = 28,240).

Students in the sample completed questionnaires at each wave of data collection. The base year questionnaires requested information about respondents' background, personal characteristics, school experiences, career aspirations, attitudes toward work, part-time work during high school, and a number of other topics. The first follow-up for the younger cohort repeated most of the questions in the base year questionnaire, thus permitting extensive analysis of change. The first and second follow-ups of the older cohort and second follow-up of the younger cohort requested detailed information regarding work, family formation, education, military service, and attitudes. In addition to the student questionnaire data, a lengthy questionnaire was completed by the principal or other administrator of each school during the first two waves of data collection, students completed cognitive tests (senior cohort in base year only), teachers completed a brief checklist in the base year only, and a subsample of parents completed base year questionnaires. (See Jones et al. 1983 and Frankel et al. 1981 for more detail).

In addition to the primary HSB data, five research institutions formed a consortium to collect supplemental data from principals, teachers and other staff in approximately half of the original HSB schools. Members of the consortium are--

The National Center for Research in Vocational Education
The Ohio State University
Columbus, OH 43210

The Wisconsin Center for Education Research
The University of Wisconsin-Madison
Madison, WI 53706

The Institute for Research in Educational Finance and Governance
Stanford University
Stanford, CA 94305

The Center for Educational Policy and Management
The University of Oregon
Eugene, OR 97403

BEST COPY AVAILABLE

The Center for the Social Organization of Schools
Johns Hopkins University
Baltimore, MD 21218

Members of the consortium have shared expenses of a subcontract with NORC to collect the data, have cooperated in constructing the survey questionnaires, and divided the work of data preparation. Data collection for the Supplemental Survey occurred in the Spring of 1984. It would have been preferable to have coordinated the timing of this data collection with that of the first follow-up HSB survey, in order to describe schools during the time period in which respondents were in attendance. The generally slow pace of change in institutions such as schools, however, suggests that the timing of the Supplemental Survey is not a serious enough problem to produce major distortions in the relationships of primary interest here.

Five questionnaires were prepared for the Supplemental HSB survey, one corresponding to each of five types of respondents: high school principal, teachers, vocational coordinator, head of guidance, and community service coordinator. Up to 30 teachers in each school responded to the teacher questionnaire; only one respondent per school completed each of the other questionnaires. (See Jones, Knight, and Ingels 1984 for more detail on the Supplemental Data collection).

This paper makes use of the base-year and first follow-up questionnaire data on the younger cohort (1980 sophomores), base-year and first follow-up test scores, base-year principal data from the main HSB survey, and information from the principal and teacher and guidance questionnaires associated with the Supplemental Survey. Data from the principal and teacher and guidance questionnaires of the Supplemental Survey and the principal questionnaire of the main survey were merged with student data such that each student (up to 36) in a given school was assigned the same value on all variables taken from those questionnaires. Because less than half of the original HSB schools participated in the Supplemental Survey, the sample size of the merged data is 8470.

## Merged File

A large working data file was created for the statistical analyses. This data file consisted of six components:

1. selected variables from the base-year younger cohort data;
2. selected variables from the first follow-up younger cohort data;
3. selected variables from the base-year principal questionnaire;
4. selected variables from the principal questionnaire of the Supplemental Survey;
5. selected variables from the teacher questionnaire of the Supplemental Survey;

6. selected variables from the guidance counselor questionnaire of the Supplemental Survey; and

7. selected variables calculated as within-school means of the base year student data.

Separate data files were created containing the selected variables in each of these six components. Each of these files contains data transformations needed for analysis. These six files were merged in such a manner that all cases in which the respondent did not participate in both the base-year and first follow-up surveys were excluded. The resulting sample size is 8470, which is 28.2% of the 30,030 members of the base-year younger cohort sample (31.2 percent of the 27119 respondents to both the base year and first follow-up surveys).

## Variables

Four broad categories of variables are used in this study--outcomes, school and schooling characteristics, socioeconomic background and ascribed status characteristics, and geographic regions.

Outcomes. Due to the longitudinal design of the HSB data, two measures of each outcome for each student respondents are available, one when respondents were high school sophomores and one two years later. The dependent variables in the regressions are always defined by the time-two measure. In every case, the corresponding time-one measure is included as one independent variable.

There are seven subcategories of outcomes--student deportment, cognitive achievement, educational and occupational aspirations, attitudes about school, attitudes about self, peer relationships, as well as orientations toward work, family and community life. Their operational definitions are summarized as follows:

o Deportment--four measures of student self-reported behavior:

--days absent from school but not ill, measured from the beginning of school to Christmas vacation. Six response categories were included: none, 1 or 2 days, 3 or 4 days, 5 to 10 days, 11 to 15 days, 16 to 20 days, 21 or more days. Numeric codes for each of these categories were recoded to the midpoint of the range. The upper category was assigned a value of 22.

--days late to school. The same time period as days absent; the same response categories, and the same recoded were were used.

--response to "Every once in a while I cut a class" (true/false).

--unprepared for classes, an index of student classroom preparation. Students were asked how often they came to class without pencil or paper, without books, and without having homework done. Four response categories were provided, ranging from "usually" to "never."

o Cognitive Achievement - variables include the following:

--verbal test score, the average of standardized reading, writing and vocabulary tests. The input tests had nominal means of 50 and standard deviations of 10. The same means and standard deviations were used to create the standardized test scores at both time points.

--math test score, the average of 2 standardized mathematics tests, each with mean of 50 and standard deviation of 10.

--student self-reported grades so far in high school, coded to a four-point scale.

o Educational and Occupational Aspirations - responses to two questions:

--educational expectation: "As things stand now, how far in school do you think you will get?" Nine response categories were provided. These are scaled to reflect the approximate number of years of schooling.

--occupational expectation: "Write in here the name of the job or occupation that you expect or plan to have when you are 30 years old. Even if you are not sure, write in your best guess. Which of the categories below comes closest to describing that job?" Seventeen broad response options were provided. A Duncan SEI estimate for each occupational category defines the numeric value of the variable. Nonoccupational categories such as "not working" and "homemaker or housewife only" were coded missing.

o Attitudes about School--true/false responses to three questions:

--interested in school, "I am interested in school."

--satisfied with school, "I am satisfied with the way my education is going."

--don't feel safe, "I don't feel safe at this school."

o Attitudes about Self

--locus of control, scale consisting of six items such as "Good luck is more important than hard work for success." Five response categories ranging from "strongly agree" to "strongly disagree" were provided. Items such as the one quoted were reflected so that the scale is calibrated such that high numeric values represent high internal locus of control.

--self-esteem, a scale consisting of six items such as "I take a positive attitude toward myself." The response categories used for locus of control were used. All items in the index were

scaled so that high numeric values represented high (strong) self-esteem.

--self-image, primary variables asking whether three statements about self are true or false: "I am overweight," "others think of me as physically unattractive," and "I am popular with other students in my class."

o Peer Relationships--four indices consisting of the following:

--time with friends, the mean of four items, one indicating frequency of visiting with friends, one indicating frequency of "going out on dates," and one indicating frequency of talking on the telephone. Each variable had four response options: rarely or never, less than once a week, once or twice a week, and every day or almost every day. Codes assigned to these categories are 0, .5, 1.5, and 6, respectively.

--type of friends, intended to reflect the degree to which the respondent's friends conform to institutional norms in school. It is composed of seven items: whether friend gets good grades, is interested in school, attends classes regularly, plans to go to college, and is popular, and how friends feel toward good students, and toward active students. The first five are true-false items, scored 1 = true, 0 = false. The last two are measured by three response options: 0 = do not think well of, 1 = makes no difference, 2 = thinks well of.

--image that respondent believes peers have of him or her. This variable is an index of four items: whether friends view the respondent as popular, socially active, a good student, and as important. Each item was scored in a three point scale: 1 = not at all, 2 = somewhat, 3 = very much.

--having a steady date, defined by a single item asking whether one has a steady date. It is scored 1 = yes, 0 = no.

o Non-School Orientations--three indexes measuring student attitudes toward work, family, and community life. For each item in these indexes, three response categories indicated the degree of importance in the student's life.

--work, including the importance of being successful, having lots of money, and being able to find steady work.

--family, including the importance of finding the right person to marry and having a happy life, living close to parents and relatives, and getting away from "this area" of the country.

--community, indicated by the degree of importance of being a leader in the community, being able to give one's child better opportunities, and working to correct social and economic inequalities.

School and Schooling Characteristics. Thirty-four variables were selected from the HSB-base year school file, from the principal, teacher, and guidance questionnaires of the Supplemental Survey, and from within-school means calculated from base year student data. In addition, the analyses include eight region dummy variables. These school characteristics are classified into seven broad categories, listed below. The first three are from the base year school questionnaire.

- o Sector--contains three dummy variables, one for public schools, one for Catholic schools, and one for other private schools. "Other private schools" refers to those that are neither Catholic nor public. The public-school dummy is omitted from the regressions; hence, the coefficients on the other two indicate comparison to public schools.

- o School desegregation--a dummy variable indicating whether the school was under a court order to desegregate (1=yes). A variable indicating the percentage of students bussed to achieve racial balance in the schools is also included.

- o Demographic and socioeconomic composition--variables describing the demographic and socioeconomic composition of schools: percentage of black students, percentage Hispanic, number of students, percentage from disadvantaged families.

- o School policies--a classification that includes a somewhat heterogeneous collection of variables that generally are viewed as legitimate instruments of school policy and practices. Four subcategories are included:

  --facilities and resources, including the ratio of teachers to students, a rough indicator of the reciprocal of class size, and the percentage of staff with 10 or more years experience

  --teacher characteristics, variables largely influenceable by deliberate policy. These are the proportion of staff with 10 or more years tenure; proportion of staff who are Hispanic, who are black, and who are female; and the average teacher attendance percentage

  --curriculum, including the number of math and science courses, number of vocational courses, and number of nonacademic and nonvocational courses (sometimes characterized as "frills" in debates over school curriculum; e.g., driver's training, art, courses in marriage and family).

  --exposure to schooling, measured by average daily attendance. The importance of time spent in learning has been argued strongly (Wiley 1976; Wiley and Harnischfeger 1974).

- o Student Context--two variables describing the educational characteristics of students in the school. These are the proportion of the 1979 senior class attending college, and proportion that dropped out of school. Four variables are also included that

describe the respondent's perceptions of the school's disciplinary quality: whether school discipline is perceived to be fair and to be strict, whether school deportment rules are enforced, and whether a list of misbehaviors (such as failure to obey teachers, talking back to teachers) are a problem.

As noted above, the variables describing educational characteristics are taken from the base-year questionnaire; student perceptions of discipline are taken from the base-year student questionnaire and are computed as school means. The rationale for including variables of this type stems from arguments to the effect that student context has an important impact on individual students. Students attending a school from which a high percentage of students attends college, for example, are themselves more likely to attend college. Such arguments have a venerable history in the social sciences (Coleman 1961; Coleman et al. 1966; McDill and Rigsby 1972), but the strong warnings against overinterpretation of contextual effects (Hauser 1970, 1971, 1974) must be answered before the inference of contextual effects is warranted.

- o School Quality Judgments (staff)--an index composed 8 items asking the principal to evaluate the degree to which matters such as drugs, theft, vandalism, and conflict are problems in the school.

Seven school and schooling variables were taken from the Supplemental Survey data, they are as follows:

- o Teachers' estimates of the ability/capacity of students in the school to learn. This variable is an index composed of four items: the ability estimates given by teachers as a ratio to the school mean verbal test score; belief on the part of teachers that many students do not have the capacity to learn the material (reflected), teachers' belief that students' habits reduce students' chances of success (reflected); and teachers' belief that their efforts are wasted (reflected).

- o Teacher's estimates of disciplinary climate. This variable is an index of four items from the teacher questionnaire. These are teacher belief that tardiness to class interferes with teaching, whether teachers are expected to enforce school-wide disciplinary standards, percentage of class time each teacher estimates is devoted to getting students to behave; and how teacher ranks the importance of discipline and good work habits in a ranking of educational goals.

- o Teacher emphasis on high performance standards and press for hard work and learning. This variable is an index of 15 items from the teacher questionnaire. The items include rank order of importance of academic excellence (out of a list of seven), percentage of class time spent on routine matters (reflected), percentage of class time spent on instruction, amount of homework time assigned (estimated), percentage of homework checked for completion, percentage of homework graded, number of major exams

per grading period, number of quizzes per grading period, days required to return exams (reflected), days required to return quizzes (reflected), time spent in class reviewing quizzes, time spent in class reviewing exams, number of writing assignments per grading period, and percentage of students recognized in class for academic achievement. Items from the teacher questionnaire were averaged for each school prior to calculating index values.

- o Percentage of students rewarded for academic achievement. This variable is defined by dividing the number of students rewarded, as estimated by the principal on the Supplemental Survey principal questionnaire, by the size of the student population, taken from the base-year school questionnaire.

- o Primary guidance services. This variable is defined as the mean of four items reported on the guidance questionnaire. These items estimate student utilization of four types of guidance services considered to be "primary delivery modes" by the guidance professions: classes on vocational information, units in academic classes on vocational matters, individual counseling, and group counseling.

- o Secondary guidance services. This variable is defined as the mean of the utilization of 15 types of guidance services considered by guidance professionals to be of secondary importance. Examples include assemblies, career days, tours of postsecondary institutions, and tours of local business firms.

Each item entering the above two indexes is defined as the product of the number of students using the service and the average time or frequency of use.

- o Counselor student ratio. This variable is the number of counselors (from the guidance questionnaire) divided by the number of students (from the base year administrator questionnaire).

These school and schooling characteristics are viewed as representing a rough and imperfect causal hierarchy. In this hierarchy, sector is viewed as being unaffected by the other categories of variables, but it may affect them. Student demographic composition may be affected by sector (Coleman, Hoffer, and Kilgore 1982). On the other hand, demographic composition probably is not affected by the other groups of variables but may affect them. Student behavior context (e.g., college attendance) may be influenced by sector and demographic characteristics but is not likely to affect sector and demographics. Teacher activities in the classroom may be affected by sector, demographics, and student context. However, the causal hierarchy may break down here, because it is possible that classroom actions affect student context (e.g., dropout rate). The school policy variables may be affected by sector, demographics, student context, and teacher actions. They may, in turn, affect quality judgments. Again, however, the causal hierarchy partially breaks down. The policy variables may, for example, affect student context and teacher actions in classroom activities.

Status Characteristics. Fifteen status characteristics were entered in each regression equation as statistical controls. These characteristics are: race (1=black, 0=other); ethnicity (1=Hispanic, 0=other); father's occupation (Duncan SEI assigned to 14 broad occupational categories); father's education (approximate number of years); mother's occupation (Duncan SEI, the same categories used for fathers); mother's education (defined as for fathers); log of family income; number of siblings; father in household (1=in household, 0=not in household); mother in household (defined as for father); other female guardian in household (defined as for father); other male guardian in household (defined as for father); whether student lives alone; number of family possessions from a checklist (e.g., two or more cars/trucks, 50 or more books, own bedroom); whether the youth has his or her own study space; whether family owns home (1=yes, 0=no); and number of rooms in the home as a ratio to the number of persons in the home. The first three of these variables are ascribed status characteristics; the rest are indicators of the socioeconomic status of one's family.

In addition to the substantive status variables, five missing-data dummies were included in each regression that also included the corresponding status characteristic. One missing-data dummy is associated with each of the following variables: father's occupation, father's education, mother's occupation, mother's education, and family income. The missing-data dummies help to resolve in an empirical way what would otherwise be knotty conceptual and measurement difficulties, such as how to treat mother's occupation if she reports she is a "housewife only" or how to compensate for the likelihood that reporting errors on income are negatively correlated with income.

Region. Dummy variables for each of eight geographic regions as defined by the U.S. Bureau of Census are included in the regressions. The West North Central region is omitted and therefore becomes the comparison group. These variables are included because past experience with the HSB data shows that they affect results on substantive questions, even when extensive controls for other variables are included.

## Results

The full impact of the background variables and school variables would be masked in models containing all the lagged endogenous variables on the right. Therefore, empirical estimates of effects are presented in three steps. First, a reduced-form model is examined which contains all background variables as predictors and the five deportment variables as outcomes. Second, the school variables are added to the reduced form model, and finally the full model is examined. After completing these steps, the model is trimmed by deleting variables that exhibit little or no effects, and the bidirectional effects of the parsimonious version are considered. All results are displayed separately by gender. Since the Supplemental Survey of High School and Beyond contains fewer than half of the original sample of schools, most calculations were carried out without the variables taken from the supplemental questionnaires. Models estimated from the sample contained in the Supplemental Survey are identified in the tables; otherwise, the full sample was used.

Table 3.1 displays the reduced form estimates. None of these effects are large and the R-squares are small. The results generally are sensible, though

TABLE 3.1

TOTAL EFFECTS OF EXOGENOUS VARIABLES

STANDARDIZED COEFFICIENTS

MALES

| | ABSTSH2 | LATESH2 | CUTCLS2 | NOTPREP2 | DROPOUT2 |
|---|---|---|---|---|---|
| NEWENGL1 | 0.0428*** | 0.0516*** | 0.0017 | 0.0269 | -0.0046 |
| MIDATL1 | 0.0284 | 0.0190 | -0.0265 | 0.0061 | -0.0068 |
| SOATL1 | -0.0025 | -0.0144 | -0.0166 | 0.0090 | 0.0227 |
| ESCNTRL1 | -0.0136 | -0.0359*** | -0.0246 | 0.0011 | 0.0165 |
| WSCNTRL1 | -0.0119 | -0.0034 | -0.0299 | 0.0191 | 0.0289 |
| ENCNTRL1 | -0.0076 | -0.0083 | -0.0330 | 0.0226 | -0.0041 |
| MOUNTN1 | 0.0595*** | 0.0446*** | 0.0506*** | 0.0074 | 0.0016 |
| PACIFIC1 | 0.0600*** | 0.0688*** | 0.0444*** | 0.0048 | 0.0105 |
| LIVALN1 | 0.0114 | -0.0084 | 0.0005 | 0.0216 | 0.0181 |
| FATHER1 | -0.0415*** | -0.0480*** | -0.0207 | 0.0076 | -0.0593*** |
| OTHGRD1 | -0.0020 | -0.0119 | -0.0145 | 0.0077 | 0.0227 |
| MOTHER1 | -0.0240 | -0.0244 | -0.0082 | 0.0013 | -0.0430*** |
| OTPGRD1 | -0.0031 | -0.0097 | -0.0020 | 0.0128* | 0.0297* |
| NSIBS1 | -0.0455*** | -0.0177*** | -0.0124 | 0.0027 | 0.0146** |
| PTHOCC1S | -0.0288* | 0.0179 | -0.0079 | 0.0087 | 0.0094 |
| PTHORIS1 | -0.0162 | 0.0100 | -0.0081 | 0.0100 | 0.0221 |
| PTHEDC1S | -0.0128 | 0.0201 | -0.0077 | 0.0104 | 0.0221* |
| MTHOCC1S | -0.0088 | 0.0086 | -0.0122 | 0.0103 | 0.0166 |
| MTHORIS1 | -0.0089 | -0.0109 | -0.0180 | 0.0060 | 0.0137 |
| MTHEDC1S | -0.0119* | -0.0030 | -0.0283* | 0.0128 | 0.0358* |
| MTHERIS1 | -0.0139 | 0.0040 | -0.0110 | 0.0078 | 0.0131 |
| LFRINC1S | -0.0124 | 0.0464*** | 0.0586*** | 0.0101 | 0.0466*** |
| LFRIMIS1 | -0.0064 | 0.0187** | 0.0251* | 0.0104 | 0.0564*** |
| HOMOWN1 | -0.0191 | 0.0179 | -0.0067 | 0.0080 | 0.0018 |
| HOMCROWD | -0.0122 | -0.0238 | -0.0287* | 0.0120 | 0.0164 |
| POSSALL1 | -0.0052 | -0.0070 | -0.0176 | -0.0401*** | -0.0140 |
| BLACKCHP | -0.0214 | -0.0122** | -0.0211 | -0.0128 | 0.0202 |
| HISPNIC1 | 0.0019 | 0.0111 | 0.0007 | | |

STANDARDIZED COEFFICIENTS

FEMALES

| | ABSTSH2 | LATESH2 | CUTCLS2 | NOTPREP2 | DROPOUT2 |
|---|---|---|---|---|---|
| NEWENGL1 | 0.0106 | 0.0450*** | 0.0095 | 0.0410*** | -0.0148 |
| MIDATL1 | 0.0051 | 0.0316 | -0.0268 | 0.0256 | -0.0309 |
| SOATL1 | -0.0160 | 0.0064 | -0.0308 | 0.0048 | -0.0210 |
| ESCNTRL1 | -0.0281* | 0.0021 | -0.0503*** | 0.0001 | -0.0084 |
| WSCNTRL1 | -0.0330* | -0.0051 | -0.0414* | 0.0072 | -0.0144 |
| ENCNTRL1 | -0.0238** | -0.0107 | -0.0593*** | -0.0022 | -0.0053 |
| MOUNTN1 | 0.0588*** | 0.0857*** | 0.0725*** | 0.0212 | -0.0092 |
| PACIFIC1 | 0.0615*** | 0.1153*** | 0.0755*** | 0.0102 | -0.0044 |
| LIVALN1 | 0.0128 | -0.0067 | -0.0001 | 0.0103 | -0.0162 |
| FATHER1 | -0.0746*** | -0.0599*** | -0.0238* | 0.0102 | -0.0324*** |
| OTHGRD1 | -0.0057 | -0.0180 | -0.0188 | -0.0022 | -0.0324*** |
| MOTHER1 | -0.0102 | -0.0155 | -0.0079 | 0.0120 | -0.0150** |
| OTPGRD1 | -0.0095 | -0.0287* | 0.0172 | -0.0387** | -0.0284*** |
| NSIBS1 | -0.0201 | -0.0143** | 0.0194 | -0.0127* | -0.0200 |
| PTHOCC1S | -0.0067 | 0.0122 | 0.0405*** | -0.0053 | -0.0249* |
| PTHORIS1 | -0.0073 | 0.0224 | 0.0118 | -0.0066 | -0.0238 |
| PTHEDC1S | -0.0032 | 0.0154 | 0.0160 | -0.0092 | -0.0072 |
| MTHOCC1S | -0.0098 | 0.0223 | -0.0212 | -0.0292* | -0.0432*** |
| MTHORIS1 | -0.0121 | -0.0099 | -0.0048 | -0.0206 | -0.0042 |
| MTHEDC1S | -0.0326* | 0.0160 | 0.0078 | 0.0149 | -0.0279 |
| MTHERIS1 | -0.0051 | 0.0527*** | 0.0502*** | 0.0065 | -0.0396*** |
| LFRINC1S | -0.0370* | 0.0220* | 0.0108 | 0.0006 | -0.0626*** |
| LFRIMIS1 | -0.0025 | 0.0221 | 0.0051 | 0.0021 | -0.0106 |
| HOMOWN1 | -0.0252* | 0.0273 | 0.0139 | -0.0370** | -0.0231 |
| HOMCROWD | -0.0074 | 0.0088 | 0.0188 | -0.0522*** | -0.0585*** |
| POSSALL1 | -0.0205 | 0.0231* | -0.0132 | -0.0050 | 0.0297** |
| BLACKCHP | -0.0170 | 0.0208 | -0.0196 | -0.0050 | |
| HISPNIC1 | 0.0017 | | | | |

79

TABLE 3.1 -- continued

TOTAL EFFECTS OF EXOGENOUS VARIABLES

UNSTANDARDIZED COEFFICIENTS

MALES

| | ABSTSH2 | LATESH2 | CUTCLS2 | NOTPREP2 | DROPOUT2 |
|---|---|---|---|---|---|
| NEWENGL1 | 0.7597*** | 1.0731*** | 0.0027 | 0.0685 | -0.0060 |
| MIDATL1 | 0.3058 | 0.2308 | -0.0329 | 0.0125 | -0.0054 |
| SOATL1 | -0.0273 | -0.1793 | -0.0206 | 0.0143 | 0.0186 |
| ESCNTRL1 | -0.2290 | -0.6928*** | -0.0478 | 0.0026 | 0.0209 |
| WSCNTRL1 | -0.1488 | -0.0479 | -0.0423 | 0.0031 | 0.0267 |
| ENCNTRL1 | -0.0787 | -0.0915 | -0.0367 | 0.0187 | -0.0030 |
| MOUNTN1 | 1.0528*** | 0.8890*** | 0.1017*** | 0.0082 | 0.0022 |
| PACIFIC1 | 0.7051*** | 0.9113*** | 0.0502** | 0.0097 | 0.0091 |
| LIVALN1 | 0.2018 | 0.4572 | -0.0221 | 0.0152 | 0.0648 |
| FATHER1 | -0.3509*** | -0.5091*** | -0.0232 | 0.0151 | -0.0414*** |
| OTHGRD1 | -0.0292 | -0.1917 | -0.0127 | 0.0095 | 0.0240 |
| MOTHER1 | -0.2429 | -0.2774 | -0.0049 | 0.0132 | -0.0438*** |
| OTPGRD1 | -0.0348 | -0.0188 | -0.0026 | 0.0784* | 0.0425* |
| NSIBS1 | -0.0848*** | 0.0793*** | -0.0002 | 0.0001 | 0.0048** |
| PTHOCC1S | -0.0556* | 0.0060 | -0.0005 | 0.0115 | 0.0151 |
| PTHORIS1 | -0.1492 | 0.1040 | -0.0011 | 0.0120 | -0.0031* |
| PTHEDC1S | -0.2048 | 0.2921 | -0.0003 | 0.0063 | 0.0003 |
| MTHOCC1S | -0.0018 | 0.0020 | -0.0004 | 0.0044 | 0.0104 |
| MTHORIS1 | -0.0221 | -0.1749 | -0.0188 | 0.0000 | 0.0046* |
| MTHEDC1S | -0.0550* | -0.0058 | -0.0056 | 0.0012 | 0.0091 |
| MTHERIS1 | -0.0214 | 0.0428 | -0.0118 | 0.0142 | 0.0037 |
| LFRINC1S | 0.0843 | 0.4964*** | 0.0452*** | 0.0186 | 0.0409*** |
| LFRIMIS1 | 0.0818 | 0.4883*** | 0.0352* | 0.0211 | 0.0435*** |
| HOMOWN1 | -0.1909 | -0.2096 | -0.0078 | 0.0224 | 0.0006 |
| HOMCROWD | -0.0741 | -0.1843 | -0.0178* | 0.0221 | 0.0244 |
| POSSALL1 | -0.1041 | -0.1571 | -0.0396 | -0.0221 | 0.0112 |
| BLACKCHP | -0.2490 | -0.4074*** | -0.0269 | -0.0661*** | -0.0117 |
| HISPNIC1 | 0.0235 | 0.1553 | 0.0009 | -0.0229 | 0.0186 |

UNSTANDARDIZED COEFFICIENTS

FEMALES

| | ABSTSH2 | LATESH2 | CUTCLS2 | NOTPREP2 | DROPOUT2 |
|---|---|---|---|---|---|
| NEWENGL1 | 0.1772 | 0.3124*** | 0.0196 | 0.0178 | -0.0183 |
| MIDATL1 | 0.0511 | 0.0498 | -0.0318 | 0.0208 | -0.0232 |
| SOATL1 | -0.1630 | 0.0362 | -0.0372 | 0.0143 | 0.0160 |
| ESCNTRL1 | -0.4662* | -0.0486 | -0.0486*** | 0.0118 | 0.0104 |
| WSCNTRL1 | -0.3838* | -0.0274 | -0.0710* | 0.0106 | 0.0125 |
| ENCNTRL1 | -0.4906** | -0.0992 | -0.0486*** | -0.0025 | -0.0057 |
| MOUNTN1 | 0.9910*** | 1.2774*** | 0.1452*** | 0.0116 | 0.0119 |
| PACIFIC1 | 0.6949*** | 1.3402*** | 0.1014*** | 0.0202 | -0.0038 |
| LIVALN1 | 0.9829 | 0.6446 | -0.0231 | 0.0088 | 0.0132 |
| FATHER1 | -0.6282*** | -0.5263*** | -0.0418** | 0.0110 | -0.0324*** |
| OTHGRD1 | 0.0706 | -0.2228 | -0.0301 | 0.0216 | -0.0340*** |
| MOTHER1 | -0.1406 | -0.3192 | -0.0188 | -0.0262 | -0.0327** |
| OTPGRD1 | -0.1914 | -0.2537 | 0.0036 | 0.0050 | -0.0076*** |
| NSIBS1 | -0.0352 | -0.0184 | 0.0004 | 0.0008*** | -0.0004 |
| PTHOCC1S | -0.0013 | 0.0065** | 0.0393*** | 0.0007* | -0.0013 |
| PTHORIS1 | 0.0597 | 0.1187 | 0.0007 | 0.0238 | -0.0013* |
| PTHEDC1S | 0.0040 | 0.0202 | 0.0006 | 0.0007 | -0.0001 |
| MTHOCC1S | -0.0019 | -0.0048 | -0.0002 | 0.0281* | -0.0035*** |
| MTHORIS1 | -0.0968 | -0.1943 | -0.0110 | 0.0048 | -0.0012 |
| MTHEDC1S | -0.0600* | -0.0113 | -0.0064 | 0.0205 | -0.0036 |
| MTHERIS1 | -0.0485 | 0.1600 | 0.0401*** | 0.0028 | -0.0304*** |
| LFRINC1S | -0.2273* | 0.3772*** | 0.0278 | 0.0078 | -0.0428*** |
| LFRIMIS1 | -0.0256 | 0.2791* | 0.0124 | 0.0026 | -0.0043 |
| HOMOWN1 | -0.2288* | 0.0674 | -0.0054 | 0.0266** | -0.0148 |
| HOMCROWD | -0.0523 | 0.1321 | 0.0101 | 0.0093*** | -0.0282*** |
| POSSALL1 | -0.1787 | 0.0167 | 0.0401 | -0.0065 | 0.0148 |
| BLACKCHP | -0.1716 | 0.3071* | -0.0158 | -0.0129 | 0.0254*** |
| HISPNIC1 | 0.0198 | 0.2488 | | | |

80

89

BEST COPY AVAILABLE

NOTES:

1. VARIABLE DEFINITIONS

| | |
|---|---|
| ABSTSH2 | ABSENT FROM SCHOOL BUT NOT ILL, T2 |
| LATESH2 | LATE TO SCHOOL, T2 |
| CUTCLS2 | CUT CLASSES NOW AND THEN, T2 |
| NOTPREP2 | INDEX OF COMING TO CLASSES UNPREPARED, T2 |
| DROPOUT2 | RESPONDENT DROPPED OUT OF SCHOOL |
| NEWENGL1 | NEW ENGLAND REGION DUMMY |
| MIDATL1 | MIDDLE ATLANTIC REGION DUMMY |
| SOATL1 | SOUTH ATLANTIC REGION DUMMY |
| ESCNTRL1 | EAST-SOUTH CENTRAL REGION DUMMY |
| WSCNTRL1 | WEST-SOUTH CENTRAL REGION DUMMY |
| ENCNTRL1 | EAST-NORTH CENTRAL REGION DUMMY |
| MOUNTN1 | MOUTAIN REGION DUMMY |
| PACIFIC1 | PACIFIC REGION DUMMY |
| LIVALN1 | RESPONDENT LIVES ALONE |
| FATHER1 | FATHER LIVES IN HOUSEHOLOD |
| OTMGRD1 | OTHER MALE BUARDIAN LIVES IN HH |
| MOTHER1 | MOTHER LIFES IN HOUSEHOLD |
| OTFGRD1 | OTHER FEMALE GUARDIAN LIVES IN HH |
| NSIBS1 | NUMBER OF SIBLINGS |
| FTHOCC1M | FOTHER'S OCCUPATION |
| FTHOMIS1 | MISSING DATA DUMMY FOR FATHER'S OCC |
| FTHEDC1M | FATHER'S EDUCATION |
| MTHOCC1M | MOTHER'S OCCUPATION |
| MTHOMIS1 | MISSING DATA DUMMY FOR MOTHER'S OCC |
| MTHEDC1M | MOTHER'S EDUCATOION |
| MTHEMIS1 | MISSING DATA DUMMY FOR MOTHER'S ED |
| LFAMINC1M | LOG OF FAMILY INCOME |
| LFAMMIS1 | MISSING DATA DUMMY FOR FAMILY INC |
| HOMOWN1 | PARENTS OWN THEIR HOME |
| HOMCROWD | NO. OF ROOMS IN HOME/NO. OF RESIDENTS |
| POSSALL1 | NUMBER OF POSSESSIONS IN HOME |
| BLACKCMP | RESPONDENT IS BLACK |
| HISPNIC1 | RESPONDENT IS HISPANIC |

2. PROBABILITIES ARE FOR TWO-TAILED TESTS

| | |
|---|---|
| * | $P < .01$ |
| ** | $P < .001$ |
| *** | $P < .0001$ |



BEST COPY AVAILABLE

the detailed pattern could not have been anticipated. Father present in the household reduces truancy, tardiness and the propensity to drop out of school; this is true for both genders. These are behaviors that probably can be more readily monitored from the home than can cutting class and coming to classes unprepared, so the results are reasonable. The pattern of effects that presence of parent figures in the home have on dropping out of school is quite interesting and is observed for both males and females. Having a natural parent, either father or mother, in the home discourages dropping out. Having a guardian who is not one's biological parent in the home encourages dropping out. Siblings tend to stimulate misbehavior in school and dropping out. There are few significant effects of parental education and occupation. Curiously, high family income tends to stimulate these mild forms of deviance except that there is a slight tendency for youth from high income families not to drop out of school. The first of these two findings supports results reported by DiPrete (1981). The effects of race and ethnicity exhibit erratic sign reversals across the five outcomes. These effects generally are small, but black females are 4.5 percent less likely to drop out of school than are white females.

Estimates of effects of school variables are displayed in tables 3.2 and 3.3. Table 3.2 contains estimates of all school variables except those contained in the supplemental survey; these results are based on the full sample. Table 3.3 shows estimates of effects of the variables from the Supplemental Survey. They were calculated from the smaller sample. Both tables are based on calculations in which all exogenous variables listed in table 3.1 were included in the models. Table 3.3 does not repeat listings of estimates of effects for variables not measured in the Supplemental Survey. Those estimates, derived from the reduced sample, generally are close to those based on the full sample, but the levels of statistical significance are smaller.

School effects on absence generally are quite small. Only one coefficient is significant for males; the school mean rating for fair discipline tends to reduce absence for high school males. For females too, only one coefficient is significant in table 3.2, but it is not on the same variable as for males. As percentage of faculty Hispanic increases, there is a slight tendency for absence to decrease. This result does not have an obvious explanation. Also, for females the teacher discipline (estimate of climate (problems) has a statistically significant positive effect on absence.

In contrast, several measured factors influence tardiness, and the pattern is similar for females and males. Students attending non-Catholic private schools are late more often than public school students. Students attending large high schools are more frequently tardy than students attending small school. Interestingly, as the percentage of disadvantaged students rises, the frequency of tardiness declines. Also, schools with experienced teaching staffs tend to discourage tardiness, though this effect is small and non-significant for males. The school mean rating of effective discipline has a negative effect on tardiness, and so does the school mean rating of fair discipline for males. The percentage of students the principal reports receiving rewards for academic excellence (table 3.3) helps to reduce tardiness, but the effect is not quite statistically significant for either sex. Out of the variables from the Supplemental Survey, teacher estimate of disciplinary problems in the school has a positive effect on tardiness for both sexes, and teacher estimate of student ability has a positive effect for males.

TABLE 3.2

EFFECTS OF SCHOOL VARIABLES:
EXCLUDING SUPPLEMENTAL SURVEY DATA

STANDARDIZED COEFFICIENTS

MALES

| | ABSTSH2 | LATESH2 | CUTCLS2 | NOTPREP2 | DROPOUT2 |
|---|---|---|---|---|---|
| CATHSCH | -0.0301 | 0.0043 | -0.0516** | -0.0130 | -0.0136 |
| OPVTSCH | -0.0166 | 0.0491*** | 0.0267 | 0.0143 | 0.0032 |
| LSIZE1 | -0.0050 | 0.0468* | 0.0286 | 0.0027 | 0.0053 |
| PERATEND | 0.0157 | 0.0069 | 0.0062 | -0.0407 | 0.0039 |
| STUHISP | -0.0134 | 0.0171 | 0.0116 | -0.0418* | -0.0033 |
| FACHISP | 0.0067 | -0.0035 | -0.0121 | 0.0179 | -0.0108 |
| STUBLACK | 0.0266 | 0.0283 | 0.0237 | 0.0033 | -0.0195 |
| FACBLACK | -0.0197 | -0.0006 | 0.0142 | -0.0325 | -0.0495* |
| CLREGCOL | 0.0099 | 0.0514*** | 0.0553*** | 0.0288 | -0.0112 |
| STUDROP | 0.0013 | 0.0038 | 0.0068 | -0.0129 | -0.0488*** |
| STUBUSED | 0.0081 | 0.0027 | 0.0158 | -0.0002 | -0.0002 |
| MATHSC11 | 0.0054 | -0.0043 | -0.0020 | 0.0118 | -0.0420*** |
| MVOCED1 | 0.0017 | -0.0135 | -0.0121 | -0.0231 | -0.0064 |
| MFRILS1 | 0.0025 | -0.0184 | -0.0115 | -0.0047 | -0.0078 |
| STUDISAD | -0.0054 | -0.0470*** | -0.0283 | -0.0142 | -0.0010 |
| TEACHSTU | -0.0182 | -0.0122 | -0.0112 | -0.0128 | -0.0117 |
| PERSTAFF | 0.0039 | 0.0263 | -0.0001 | -0.0061 | -0.0376* |
| STUFEMAL | 0.0014 | 0.0092 | 0.0031 | 0.0124 | -0.0104 |
| AVETABSM | 0.0058 | 0.0210 | 0.0142 | -0.0019 | -0.0023 |
| MORE10YR | -0.0005 | -0.0119 | -0.0160 | -0.0161 | -0.0112 |
| DESEGRE | 0.0142 | 0.0018 | -0.0007 | 0.0081 | -0.0011 |
| MBULADMM | -0.0075 | 0.0063 | -0.0145 | -0.0269 | -0.0102 |
| SERPBLM | -0.0136 | 0.0074 | -0.0144 | 0.0069 | -0.0045 |
| MMRULST1 | -0.0015 | -0.0317 | -0.0809* | 0.0201 | -0.0421** |
| MSPMSCO1 | 0.0419 | 0.0042 | -0.0591** | 0.0396 | -0.0056 |
| MSREFDS1 | -0.0112 | -0.0506** | -0.0623*** | -0.0067 | -0.0052 |
| MSRFRDS1 | -0.0314* | -0.0343* | -0.0030 | -0.0369* | -0.0023 |

STANDARDIZED COEFFICIENTS

FEMALES

| | ABSTSH2 | LATESH2 | CUTCLS2 | NOTPREP2 | DROPOUT2 |
|---|---|---|---|---|---|
| CATHSCH | -0.0315 | 0.0155 | -0.0204 | 0.0663*** | -0.0513* |
| OPVTSCH | -0.0056 | 0.0264 | 0.0252 | 0.0347** | -0.0034 |
| LSIZE1 | 0.0367 | 0.0602*** | 0.0790*** | 0.0040 | 0.0348 |
| PERATEND | 0.0209 | 0.0028 | -0.0024 | -0.0145 | 0.0495** |
| STUHISP | 0.0229 | -0.0086 | -0.0017 | -0.0020 | -0.0346 |
| FACHISP | -0.0392* | -0.0028 | -0.0155 | -0.0200 | -0.0030 |
| STUBLACK | 0.0369 | 0.0363 | 0.0222 | 0.0096 | 0.0007 |
| FACBLACK | -0.0167 | -0.0215 | 0.0305 | -0.0310 | -0.0200 |
| CLREGCOL | 0.0192 | 0.0536*** | 0.0259* | 0.0132 | -0.0113 |
| STUDROP | 0.0178 | -0.0022 | 0.0180 | -0.0004 | 0.0401*** |
| STUBUSED | 0.0005 | 0.0021 | 0.0192 | -0.0085 | 0.0041 |
| MATHSC11 | -0.0216 | -0.0096 | 0.0094 | -0.0130 | -0.0432*** |
| MVOCED1 | -0.0114 | -0.0222 | -0.0204 | 0.0098 | -0.0366* |
| MFRILS1 | 0.0118 | 0.0081 | 0.0005 | -0.0014 | -0.0052 |
| STUDISAD | -0.0256 | -0.0297* | -0.0330* | -0.0056 | 0.0260 |
| TEACHSTU | -0.0046 | 0.0005 | -0.0179 | -0.0011 | -0.0334* |
| PERSTAFF | -0.0221 | 0.0056 | -0.0039 | 0.0000 | -0.0186 |
| STUFEMAL | 0.0080 | 0.0156 | 0.0030 | 0.0144 | -0.0463** |
| AVETABSM | 0.0034 | 0.0139 | 0.0171 | -0.0108 | -0.0004 |
| MORE10YR | -0.0160 | -0.0309* | -0.0144 | -0.0045 | -0.0086 |
| DESEGRE | 0.0113 | 0.0212 | 0.0085 | 0.0142 | 0.0221 |
| MBULADMM | -0.0150 | -0.0034 | -0.0164 | -0.0255 | -0.0044 |
| SERPBLM | -0.0115 | -0.0082 | -0.0033 | -0.0172 | -0.0351** |
| MMRULST1 | -0.0052 | -0.0441** | -0.0812*** | -0.0240 | -0.0176 |
| MSPMSCO1 | 0.0203 | 0.0125 | 0.0181 | 0.0467* | 0.0153 |
| MSREFDS1 | -0.0252 | -0.0776*** | -0.0779*** | 0.0020 | 0.0085 |
| MSRFRDS1 | -0.0168 | 0.0009 | 0.0119 | -0.0189 | -0.0030 |



TABLE 3.2 -- continued

EFFECTS OF SCHOOL VARIABLES:
EXCLUDING SUPPLEMENTAL SURVEY DATA

UNSTANDARDIZED COEFFICIENTS

MALES

| | ABSTSH2 | LATESH2 | CUTCLS2 | NOTPREP2 | DROPOUT2 |
|---|---|---|---|---|---|
| CATHSCH | -0.4223 | 0.0682 | -0.0822** | -0.0261 | -0.0141 |
| OPVTSCH | -0.3421 | 1.1444*** | 0.0627 | 0.0426 | 0.0049 |
| LSIZE1 | -0.0253 | 0.2680* | 0.0165 | 0.0020 | 0.0020 |
| PERATEND | 0.0020 | 0.0010 | 0.0001 | 0.0008 | 0.0000 |
| STUHISP | -0.0026 | 0.0038 | 0.0003 | -0.0012* | 0.0000 |
| FACHISP | 0.0027 | -0.0015 | -0.0005 | 0.0010 | -0.0003 |
| STUBLACK | 0.0047 | 0.0057 | 0.0005 | 0.0001 | -0.0003 |
| FACBLACK | -0.0055 | -0.0002 | 0.0005 | -0.0013 | 0.0011* |
| CLREGCOL | 0.0018 | 0.0104*** | 0.0011*** | 0.0007 | -0.0001 |
| STUDROP | 0.0005 | 0.0019 | 0.0003 | -0.0008 | 0.0015*** |
| STUBUSED | 0.0023 | 0.0018 | 0.0010 | 0.0000 | 0.0000 |
| MATHSC11 | 0.0238 | -0.0216 | -0.0010 | 0.0075 | -0.0137*** |
| MVOCED1 | 0.0094 | -0.0865 | -0.0078 | -0.0190 | -0.0027 |
| MFRILS1 | 0.0101 | -0.0826 | -0.0052 | -0.0027 | 0.0023 |
| STUDISAD | -0.0011 | -0.0105*** | -0.0006 | -0.0004 | 0.0000 |
| TEACHSTU | -0.3366 | -0.2549 | -0.0235 | -0.0342 | -0.0160 |
| PERSTAFF | 0.0011 | 0.0082 | 0.0000 | -0.0002 | 0.0008* |
| STUFEMAL | 0.0004 | -0.0031 | 0.0001 | 0.0005 | -0.0002 |
| AVETABSM | 0.0076 | 0.0311 | 0.0021 | -0.0004 | -0.0002 |
| MORE10YR | -0.0001 | -0.0023 | -0.0003 | -0.0004 | -0.0001 |
| DESEGRE | 0.1426 | 0.0200 | 0.0008 | 0.0118 | 0.0009 |
| MBULADMM | -0.0310 | 0.0292 | -0.0068 | -0.0160 | 0.0032 |
| SERPBLM | -0.1619 | 0.0998 | 0.0195 | 0.0118 | 0.0040 |
| MMRULST1 | -0.0085 | -0.2006 | -0.0261* | 0.0162 | -0.0176** |
| MSPMSCO1 | 0.7041 | 0.0788 | 0.1128** | 0.0956 | 0.0069 |
| MSREFDS1 | -0.1287 | -0.6538** | -0.0811*** | -0.0111 | -0.0044 |
| MSRFRDS1 | -0.4552* | -0.5608* | -0.0050 | -0.0770* | -0.0025 |

UNSTANDARDIZED COEFFICIENTS

FEMALES

| | ABSTSH2 | LATESH2 | CUTCLS2 | NOTPREP2 | DROPOUT2 |
|---|---|---|---|---|---|
| CATHSCH | -0.3813 | 0.1961 | -0.0293 | 0.1014*** | -0.0465* |
| OPVTSCH | -0.1380 | 0.6767 | 0.0731 | 0.1074** | -0.0063 |
| LSIZE1 | 0.1755 | 0.3008*** | 0.0488*** | 0.0028 | 0.0124 |
| PERATEND | 0.0028 | 0.0004 | 0.0000 | -0.0002 | 0.0005** |
| STUHISP | 0.0041 | -0.0016 | 0.0000 | -0.0000 | -0.0005 |
| FACHISP | -0.0142* | -0.0011 | -0.0007 | -0.0009 | -0.0001 |
| STUBLACK | 0.0058 | 0.0060 | 0.0004 | 0.0002 | 0.0000 |
| FACBLACK | -0.0042 | -0.0056 | 0.0009 | -0.0010 | -0.0004 |
| CLREGCOL | 0.0034 | 0.0099*** | 0.0006* | 0.0003 | -0.0001 |
| STUDROP | 0.0074 | -0.0009 | 0.0009 | 0.0000 | 0.0012*** |
| STUBUSED | 0.0003 | 0.0012 | 0.0012 | -0.0006 | 0.0002 |
| MATHSC11 | -0.0878 | -0.0406 | 0.0044 | -0.0067 | -0.0131*** |
| MVOCED1 | -0.0579 | -0.1179 | -0.0123 | 0.0063 | -0.0139* |
| MFRILS1 | 0.0467 | 0.0336 | 0.0002 | -0.0007 | -0.0015 |
| STUDISAD | -0.0045 | -0.0055* | -0.0007* | -0.0001 | 0.0003 |
| TEACHSTU | -0.1238 | 0.0147 | 0.0568 | -0.0038 | -0.0667* |
| PERSTAFF | -0.0052 | 0.0014 | -0.0001 | 0.0000 | 0.0003 |
| STUFEMAL | 0.0022 | 0.0044 | 0.0001 | 0.0005 | 0.0008** |
| AVETABSM | 0.0042 | 0.0179 | 0.0025 | -0.0017 | 0.0000 |
| MORE10YR | -0.0026 | -0.0052* | -0.0003 | -0.0001 | -0.0001 |
| DESEGRE | 0.1032 | 0.2060 | 0.0092 | 0.0164 | 0.0152 |
| MBULADMM | -0.0573 | -0.0136 | -0.0074 | -0.0123 | -0.0015 |
| SERPBLM | -0.1265 | -0.0981 | -0.0043 | -0.0229 | 0.0289** |
| MMRULST1 | -0.0269 | -0.2386** | -0.0498*** | -0.0157 | -0.0068 |
| MSPMSCO1 | 0.3223 | 0.2072 | 0.0341 | 0.0937* | 0.0182 |
| MSREFDS1 | -0.2694 | -0.8677*** | -0.0987*** | 0.0026 | 0.0068 |
| MSRFRDS1 | -0.2250 | 0.0136 | 0.0198 | -0.0328 | -0.0031 |



BEST COPY AVAILABLE

NOTES:

1. VARIABLE DEFINITIONS

| | |
|---|---|
| ABSTSH2 | ABSENT FROM SCHOOL BUT NOT ILL, T2 |
| LATESH2 | LATE TO SCHOOL, T2 |
| CUTCLS2 | CUT CLASSES NOW AND THEN, T2 |
| NOTPREP2 | COMES TO CLASSES UNPREPARED, T2 |
| DROPOUT2 | RESPONDENT DROPPED OUT OF SCHOOL |
| CATHSCH | CATHOLIC SCHOOL DUMMY |
| OPVTSCH | OTHER PRIVATE SCHOOL DUMMY |
| LSIZE1 | LOG OF NUMBER OF STUDENTS IN SCHOOL |
| PERATEND | AVE % OF STUDENTS ATTENDING SCHOOL |
| STUHISP | PERCENTAGE OF STUDENTS HISPANIC |
| FACHISP | PERCENTAGE OF FACULTY HISPANIC |
| STUBLACK | PERCENTAGE OF STUIDENTS BLACK |
| FACBLACK | PERCENTAGE OF FACULTY BLACK |
| CLREGCOL | % OF CLASS OF '79 ATTENDING COLLEGE |
| STUDROP | % OF STUDENTS WHO DROP OUT |
| STUBUSED | % OF STUDENTS BUSSED FOR RACIAL BALANCE |
| NMTHSC11 | NUMBER OF MATH OR SCI COURSES OFFERED |
| NVOCED1 | NUMBER OF VOC ED COURSES OFFERED |
| NFRILS1 | NUMBER OF 'FRILLS' COURSES OFFERED |
| STUDISAD | % OF STUDENTS DISADVANTAGED |
| TEACHSTU | NUMBER OF TEACHERS/NO. OF STUDENTS |
| FEMSTAFF | % OF FACULTY FEMALE |
| STUFEMAL | % OF STUDENTS FEMALE |
| AVETABSN | AVERAGE % OF TEACHERS ABSENT |
| MORE10YR | % OF TEACHERS WITH > 10 YRS EXPERIENCE |
| DESEGRE | SCH UNDER COURT ORDER TO DESEGREGATE |
| NRULADMN | ADMIN REPORT OF NO. OF RULES ENFORCED |
| SERPBLM | PRINCIPAL INDEX OF SER PBLMS IN SCH |
| MNRULST1 | SCH MEAN: STU REPORT OF N RULES ENFORCED |
| MSPHSCQ1 | SCH MEAN: STU RATING OF DISC PBLMS |
| MSREFDS1 | SCH MEAN: STU RATING OF EFFECTIVE DISC |
| MSRFRDS1 | SCH MEAN: STU RATING OF FAIR DISC |

2. PROBABILITIES ARE FOR TWO-TAILED TESTS

| | |
|---|---|
| * | P < .01 |
| ** | P < .001 |
| *** | P < .0001 |



BEST COPY AVAILABLE

TABLE 3.3

EFFECTS OF SCHOOL VARIABLES:
INCLUDING SUPPLEMENTAL SURVEY DATA

STANDARDIZED COEFFICIENTS

MALES

| | ABSTSH2 | LATESH2 | CUTCLS2 | NOTPREP2 | DROPOUT2 |
|---|---|---|---|---|---|
| TCHABIL | 0.0771 | 0.1048** | 0.0614 | 0.0553 | -0.0251 |
| TCHDISC | 0.0520 | 0.1081*** | 0.0887** | 0.0622 | -0.0168 |
| TCHEXCL | -0.0129 | -0.0023 | -0.0064 | -0.0184 | 0.0400 |
| PERREWD | -0.0023 | -0.0495 | 0.0402 | -0.0180 | 0.0479 |
| COREXP | -0.0013 | -0.0189 | -0.0113 | 0.0185 | -0.0235 |
| PERPEXP | 0.0195 | 0.0880 | -0.0269 | -0.0352 | 0.0203 |
| COUNSSTU | -0.0109 | -0.0224 | -0.0294 | 0.0049 | 0.0068 |

FEMALES

| | ABSTSH2 | LATESH2 | CUTCLS2 | NOTPREP2 | DROPOUT2 |
|---|---|---|---|---|---|
| TCHABIL | 0.0696 | -0.0010 | 0.0520 | 0.0493 | 0.0288 |
| TCHDISC | 0.0766* | 0.0766* | 0.1541*** | 0.1022*** | 0.0103 |
| TCHEXCL | 0.0034 | -0.0030 | 0.0078 | 0.0156 | 0.0105 |
| PERREWD | 0.0356 | -0.0408 | 0.0028 | 0.0160 | -0.0043 |
| COREXP | 0.0002 | -0.0066 | -0.0087 | -0.0051 | -0.0001 |
| PERPEXP | 0.0046 | 0.0241 | 0.0085 | -0.0112 | 0.0029 |
| COUNSSTU | -0.0258 | 0.0076 | -0.0073 | -0.0267 | -0.0068 |

UNSTANDARDIZED COEFFICIENTS

MALES

| | ABSTSH2 | LATESH2 | CUTCLS2 | NOTPREP2 | DROPOUT2 |
|---|---|---|---|---|---|
| TCHABIL | 0.1844 | 0.5973** | 0.0353 | 0.0403 | -0.0093 |
| TCHDISC | 0.2624 | 0.6236*** | 0.0516** | 0.0459 | -0.0063 |
| TCHEXCL | -0.1957 | -0.0404 | -0.0111 | -0.0407 | 0.0450 |
| PERREWD | -0.1140 | -2.7691 | 0.2264 | -0.1289 | 0.1707 |
| COREXP | 0.0000 | -0.0004 | 0.0000 | 0.0000 | 0.0000 |
| PERPEXP | 0.0009 | 0.0024 | 0.0001 | -0.0002 | 0.0001 |
| COUNSSTU | -8.6904 | -20.4992 | -2.7117 | 0.5722 | 0.4048 |

FEMALES

| | ABSTSH2 | LATESH2 | CUTCLS2 | NOTPREP2 | DROPOUT2 |
|---|---|---|---|---|---|
| TCHABIL | 0.3210 | -0.0051 | 0.0304 | 0.0310 | 0.0098 |
| TCHDISC | 0.3556* | 0.3811* | 0.0855*** | 0.0610*** | 0.0032 |
| TCHEXCL | 0.0472 | -0.0473 | 0.0137 | 0.0295 | 0.0107 |
| PERREWD | 1.6896 | -2.2041 | 0.0171 | 0.1035 | -0.0153 |
| COREXP | 0.0000 | -0.0001 | 0.0000 | 0.0000 | 0.0000 |
| PERPEXP | 0.0002 | 0.0011 | 0.0000 | -0.0001 | 0.0000 |
| COUNSSTU | -16.9208 | 5.6840 | -0.6086 | -2.3818 | -0.3294 |

NOTES:

1. VARIABLE DEFINITIONS

| | |
|---|---|
| ABSTSH2 | ABSENT FROM SCHOOL BUT NOT ILL, T2 |
| LATESH2 | LATE TO SCHOOL, T2 |
| CUTCLS2 | CUT CLASSES NOW AND THEN, T2 |
| NOTPREP2 | COMES TO CLASSES UNPREPARED, T2 |
| DROPOUT2 | RESPONDENT DROPPED OUT OF SCHOOL |
| TCHABIL | TEACHER RATING OF STU ABILITY |
| TCHDISC | TEACHER RATING OF DISC PROBS IN SCH |
| TCHEXCL | TEACH EMPHASIS ON ACADEMIC EXCELLENCE |
| PERREWD | PRINCIPAL REPORT OF % STU REWARDED |
| COREXP | UTILIZATION OF PRIMARY GUIDANCE SVCS |
| PERPEXP | UTILIZATION OF SECONDARY GUIDANCE SVCS |
| COUNSSTU | NO. OF COUNSELORS/NO. OF STUDENTS |

2. PROBABILITIES ARE FOR TWO-TAILED TESTS

* P < .01
** P < .001
*** P < .0001

BEST COPY AVAILABLE

NOTES:

1. VARIABLE DEFINITIONS

| | |
|---|---|
| ABSTSH2 | ABSENT FROM SCHOOL BUT NOT ILL, T2 |
| LATESP2 | LATE TO SCHOOL, T2 |
| CUTCLS2 | CUT CLASSES NOW AND THEN, T2 |
| NOTPREP2 | COMES TO CLASSES UNPREPARED, T2 |
| DROPOUT2 | RESPONDENT DROPPED OUT OF SCHOOL |
| CATHSCH | CATHOLIC SCHOOL DUMMY |
| OPVTSCH | OTHER PRIVATE SCHOOL DUMMY |
| LSIZE1 | LOG OF NUMBER OF STUDENTS IN SCHOOL |
| PERATEND | AVE % OF STUDENTS ATTENDING SCHOOL |
| STUHISP | PERCENTAGE OF STUDENTS HISPANIC |
| FACHISP | PERCENTAGE OF FACULTY HISPANIC |
| STUBLACK | PERCENTAGE OF STUDENTS BLACK |
| FACBLACK | PERCENTAGE OF FACULTY BLACK |
| CLREGCOL | % OF CLASS OF '79 ATTENDING COLLEGE |
| STUDROP | % OF STUDENTS WHO DROP OUT |
| STUBUSED | % OF STUDENTS BUSSED FOR RACIAL BALANCE |
| MATHSCI1 | NUMBER OF MATH OR SCI COURSES OFFERED |
| NVOCED1 | NUMBER OF VOC ED COURSES OFFERED |
| NFRILS1 | NUMBER OF 'FRILLS' COURSES OFFERED |
| STUDISAD | % OF STUDENTS DISADVANTAGED |
| TEACHSTU | NUMBER OF TEACHERS/NO. OF STUDENTS |
| FEMSTAFF | % OF FACULTY FEMALE |
| STUFEMAL | % OF STUDENTS FEMALE |
| AVETABSN | AVERAGE % OF TEACHERS ABSENT |
| MORE10YR | % OF TEACHERS WITH > 10 YRS EXPERIENCE |
| DESEGRE | SCH UNDER COURT ORDER TO DESEGREGATE |
| RRULALPR | ADMIN EFFORT OF NO. OF RULES ENFORCED |
| SERFELP | PRINCIPAL INDEX OF SER PBLMS IN SCH |
| RNRULST1 | SCH READ: STU REPORT OF # RULES ENFORCED |
| RSPBSCC1 | SCH READ: STU RATING OF DISC PBLMS |
| RSEFFDS1 | SCH READ: STU RATING OF EFFECTIVE DISC |
| RSRFRDS1 | SCH READ: STU RATING OF FAIR DISC |
| TCHABIL | TEACHER RATING OF STU ABILITY |
| TCHDISC | TEACHER RATING OF DISC PBLMS IN SCH |
| TCHEXCL | TEACH EMPHASIS ON ACADEMIC EXCELLENCE |
| PERREWD | PRINCIPAL REPORT OF % STU REWARDED |
| COREIF | UTILIZATION OF PRIMARY GUIDANCE SVCS |
| PERPEIF | UTILIZATION OF SECONDARY GUIDANCE SVCS |
| COUNSSTU | NO. OF COUNSELORS/NO. OF STUDENTS |

2. PROBABILITIES ARE FOR TWO-TAILED TESTS

| | |
|---|---|
| * | P < .01 |
| ** | P < .001 |
| *** | P < .0001 |



BEST COPY AVAILABLE

Catholic schools tend to discourage cutting class, but the effect is not statistically significant for females. Large schools stimulate cutting class for females, and the effect is positive but not significant for males. It seems anomalous that the percentage of graduates who attend college has a positive effect on cutting class, for both sexes. The percentage of students disadvantaged reduces class cutting, but the effect is significant only for females. The school mean of student perceptions of rule enforcement and the school mean student perceptions of effective discipline also reduce class cutting. The school mean of student reports of discipline problems in the school has a positive impact on class cutting for males, but the effect is small and nonsignificant for females. The average of teacher assessments of the disciplinary climate also has a strong positive effect on cutting class for both sexes. Since this index is defined so that high values are associated with disciplinary problems this result is reasonable.

Few of the school variables included in these models influence coming to class unprepared. Strong effects are evident on Catholic and other private schools for females. Both types of private schools increase the incidence of being unprepared in class. This result contradicts the arguments advanced by Coleman and Greeley and their coworkers regarding the influence of private schools (Coleman, Hoffer, and Kilgore 1982; Greeley 1982; Hoffer, Greeley, and Coleman 1985). Also, the teacher disciplinary climate variable has a strong positive effect on coming to class unprepared for females. For males, the percentage of Hispanic students and the school mean student rating of fair discipline both have slight but statistically significant negative effects on coming to class unprepared. For females, the school mean rating of disciplinary problems in a school has a positive impact on being unprepared for class.

Finally, Catholic schools tend to inhibit dropping out of school for females, but this effect is small and insignificant for males. For males, the percentage of the faculty who are black, number of math and science courses offered, and school mean perceptions of the number of rules enforced tend to inhibit dropping out; percentage of dropouts in the school, percentage of faculty that is black, and percentage of the teaching staff that is female exercise slight positive impacts on dropout.

It is apparent from these analyses that no single characteristics of school nor any constellation of factors that are easily measured in a survey has a dominating influence on student deportment. The significant effects that do occur are small, and the pattern is scattered. Generally, the signs of the significant coefficients agree with *a priori* expectation, but there are a few surprises. Perhaps the primary unexpected result is the lack of consistent strong effects of private schools on these deportment variables.

Estimates of the effects of the endogenous variables on deportment are shown in table 3.4. Again, most effects are fairly small, and the pattern appears scattered. There are three important exceptions, however. First, grades in school consistently have a negative effect on misbehavior. The negative and highly significant coefficients appear on all five outcomes for both genders. Second, the more time one spends with peers, the more one deviates from school norms of attending school, arriving on time, going to class, and going to class prepared. Time spent with peers also increases the likelihood of dropping out of school. The signs of all these coefficients are

TABLE 3.4

FEEDBACK EFFECTS OF ENDOGENOUS VARIABLES

STANDARDIZED COEFFICIENTS

MALES

| | ABSTSM2 | LATESM2 | CUTCLS2 | NOTPREP2 | DROPOUT2 |
|---|---|---|---|---|---|
| PARENT1 | -0.0022 | -0.0046 | -0.0239* | -0.0020 | 0.0006 |
| MARRIED1 | -0.0005 | -0.0065 | -0.0122 | -0.0169 | 0.0102 |
| SPOUSE1 | -0.0185 | -0.0038 | -0.0032 | -0.0089 | -0.0208 |
| CHILDM1 | 0.0139 | -0.0072 | -0.0140 | -0.0217 | -0.0076 |
| SPHSCOL1 | 0.0045 | 0.0164 | -0.0254** | -0.0064 | -0.0239 |
| SREPDS1 | -0.0022 | 0.0028 | -0.0065 | -0.0297* | 0.0124 |
| SRFRDS1 | -0.0013 | 0.0219 | -0.0238 | -0.0191 | 0.0011 |
| MBULSTU1 | -0.0030 | -0.0106 | -0.0077 | -0.0028 | -0.0280* |
| MEXCURR1 | -0.0009 | 0.0042 | -0.0161 | -0.0135 | -0.0099 |
| MEXCURR2 | -0.0225 | -0.0108 | -0.0326** | -0.0060 | -0.0435*** |
| GAMSDC1 | 0.0098 | -0.0044 | -0.0044 | -0.0107 | -0.0237 |
| TAMSDC1 | 0.0168 | 0.0227 | -0.0039 | -0.0095 | -0.0041 |
| PARINT1 | -0.0226 | -0.0148 | -0.0152 | -0.0106 | -0.0004 |
| PARDCAR1 | 0.0003 | -0.0037 | -0.0098 | -0.0070 | -0.0188 |
| MOREL1 | -0.0116 | 0.0075 | -0.0024 | -0.0106 | -0.0095 |
| CATHL1 | 0.0023 | 0.0283 | -0.0112 | -0.0013 | -0.0024 |
| JEWISH1 | -0.0106 | 0.0194 | -0.0108 | -0.0043 | -0.0126 |
| PROREL1 | -0.2262* | 0.0008 | -0.0164 | -0.0062 | -0.0032 |
| RELPRS1 | 0.0012 | -0.0064 | -0.0165 | -0.0068 | -0.0076 |
| ACADMIC1 | -0.0058 | 0.0142 | -0.0087 | -0.0732*** | -0.0278*** |
| AVGBAD1 | -0.0382** | -0.0458*** | -0.0537*** | -0.0225 | -0.0075 |
| VERBAL1 | 0.0062 | 0.0388* | -0.0258 | -0.0420* | 0.0060 |
| MATHSD21 | -0.0142 | 0.0037 | -0.0197 | -0.0009 | -0.0077 |
| OCCASP1 | 0.0051 | 0.0127 | -0.0079 | -0.0140 | -0.0365* |
| EDASP1 | 0.0012 | -0.0048 | -0.0117 | -0.0022 | -0.0069 |
| EDASPM1 | 0.0026 | 0.0157 | 0.0337** | -0.0185 | -0.1139*** |
| XPECGR21 | 0.0284* | 0.0198 | 0.0168 | 0.0074 | -0.1135*** |
| XPECLIT1 | 0.0028 | 0.0017 | 0.0168 | 0.0284* | -0.0197 |
| POPULB1 | -0.0056 | 0.0043 | -0.0019 | -0.0155 | -0.0850*** |
| REGDAT21 | -0.0020 | -0.0126 | -0.0571*** | -0.0139 | -0.0460*** |
| TIMWPBB1 | 0.0475*** | -0.0136*** | -0.0001 | -0.0100** | -0.0113 |
| TIPPRBB1 | -0.0069 | -0.0071 | -0.0107 | -0.0001 | -0.0070 |
| SOINAGE1 | 0.0091 | 0.0129 | -0.0208 | -0.0174 | -0.0338*** |
| TIMP TYP | 0.0191 | 0.0152 | -0.0306** | -0.0028 | -0.0005 |
| TIMWPAR1 | 0.0007 | -0.0164 | -0.0150 | -0.0060 | -0.0019 |
| WORKVAL1 | 0.0156 | -0.0028 | -0.0126 | -0.0144 | -0.0088 |
| CONRUS1 | 0.0039 | -0.0082 | -0.0064 | -0.0166 | -0.0186 |
| FAMIL1 | -0.0008 | 0.0080 | -0.0067 | -0.0128 | -0.0199 |
| LOCUS1 | -0.0006 | -0.0057 | -0.0021 | -0.0136 | -0.0078 |
| TNSCLAS1 | -0.0017 | -0.0008 | -0.0004 | -0.0146 | -0.0032 |
| USEINTC1 | -0.0109 | -0.0068 | -0.0004 | -0.0021 | -0.0042 |
| CONCPTT1 | -0.0038 | -0.0002 | -0.0087 | -0.0022 | -0.0006 |
| DEPRESS1 | -0.0089 | 0.0222** | -0.0033 | -0.0000 | -0.0193 |
| SATFSH1 | -0.0130 | -0.0077 | -0.0120 | -0.0103 | -0.0011 |
| INTRSH1 | -0.0122 | -0.0193 | -0.0120 | -0.0163 | -0.0098 |
| BTSAFE1 | -0.0050 | -0.0283* | -0.0073 | -0.0001 | -0.0009 |
| OVRWGT1 | -0.0039 | -0.0068 | -0.0019 | -0.0265* | 0.1686*** |
| UNATRT1 | -0.0096 | -0.0091 | -0.0015 | -0.0211 | 0.0202 |
| ABSTSH1 | 0.2218*** | 0.2115*** | 0.2866*** | 0.2211* | 0.0468*** |
| LATESH1 | 0.2597*** | 0.3714*** | 0.3252*** | 0.2522*** | -0.0012 |
| CUTCLS1 | 0.0866*** | 0.0714*** | 0.0476*** | | |
| NOTPREP1 | 0.0421*** | 0.0670*** | | | |



TABLE 3.4 -- continued

FEEDBACK EFFECTS OF ENDOGENOUS VARIABLES

STANDARDIZED COEFFICIENTS

FEMALES

| | ABSTSF2 | LATESF2 | CUTCLS2 | NOTPREP2 | DROPOUT2 |
|---|---|---|---|---|---|
| PARENT1 | -0.0112 | 0.0048 | 0.0038 | 0.0050 | 0.0104 |
| MARRIED1 | -0.0188 | 0.0052 | 0.0059 | 0.0017 | 0.0229* |
| SPOUSE1 | -0.0255* | -0.0066 | -0.0060 | 0.0107 | 0.0010 |
| CHILDF1 | -0.0090 | -0.0116 | -0.0061 | -0.0061 | 0.0396*** |
| SPHSCOL1 | 0.0116 | -0.0127 | -0.0310* | -0.0046 | -0.0048 |
| SREPDS1 | -0.0277* | -0.0020 | -0.0118 | -0.0057 | 0.0055 |
| SRFRDS1 | -0.0004 | -0.0234 | -0.0234 | -0.0067 | 0.0118 |
| MBULSTU1 | 0.0119 | -0.0290** | -0.0153 | -0.0153 | 0.0023 |
| MEXCURR1 | 0.0216 | -0.0005 | -0.0126 | -0.0083 | -0.0092 |
| MEXCURR2 | -0.0449*** | -0.0119 | -0.0254* | -0.0113 | 0.0675*** |
| GAMSDC1 | -0.0015 | -0.0142 | -0.0122 | -0.0139 | 0.0015 |
| TAMSDC1 | 0.0011 | -0.0180 | -0.0205 | -0.0086 | -0.0011 |
| PARINT1 | -0.0227 | -0.0111 | -0.0088 | -0.0084 | 0.0233* |
| PARDCAR1 | 0.0057 | -0.0101 | -0.0057 | -0.0054 | 0.0048 |
| MOREL1 | 0.0037 | 0.0012 | -0.0064 | -0.0064 | 0.0212* |
| CATHL1 | 0.0027 | 0.0175 | 0.0188 | -0.0227 | -0.0131 |
| JEWISH1 | -0.0212* | 0.0054 | -0.0068 | -0.0068 | -0.0036 |
| PROREL1 | -0.0082 | 0.0082 | -0.0170 | -0.0079 | 0.0229* |
| RELPRS1 | -0.0104 | -0.0096 | -0.0072 | -0.0072 | 0.0008 |
| ACADMIC1 | -0.0032 | -0.0030 | -0.0021 | -0.0021 | 0.0073 |
| AVGBAD1 | -0.0572*** | -0.0339** | -0.0755*** | -0.0755*** | -0.0801*** |
| VERBAL1 | -0.0265 | -0.0443** | 0.0641*** | 0.0641*** | 0.0103 |
| MATHSD21 | -0.0401* | 0.0293 | 0.0503*** | 0.0503*** | 0.0078 |
| OCCASP1 | 0.0001 | 0.0110 | -0.0052 | -0.0052 | 0.0219* |
| EDASP1 | -0.0051 | -0.0069 | -0.0085 | -0.0085 | 0.0166 |
| EDASPM1 | 0.0088 | -0.0102 | -0.0040 | -0.0040 | 0.0121 |
| XPECGR21 | 0.0124 | -0.0204 | -0.0090 | -0.0090 | -0.1185*** |
| XPECLIT1 | 0.0104 | 0.0206 | -0.0113 | -0.0113 | -0.1066*** |
| POPULB1 | -0.0272 | -0.0250* | -0.0309** | -0.0309** | -0.0274* |
| REGDAT21 | -0.0022 | -0.0088 | -0.0216 | -0.0216 | -0.1151*** |
| TIMWPBB1 | 0.0344** | -0.0699*** | -0.0011 | -0.0011 | -0.0128 |
| TIPPRBB1 | 0.0054 | -0.0037 | -0.0026 | -0.0026 | -0.0001 |
| SOINAGE1 | 0.0130 | 0.0067 | -0.0140 | -0.0140 | -0.0218* |
| TIMP TYP | 0.0196 | 0.0105 | -0.0110 | -0.0110 | -0.0026 |
| TIMWPAR1 | 0.0283* | 0.0315*** | -0.0158 | -0.0158 | -0.0016 |
| WORKVAL1 | 0.0158 | 0.0076 | -0.0066 | -0.0066 | -0.0107 |
| CONRUS1 | 0.0018 | -0.0018 | -0.0051 | -0.0051 | -0.0095 |
| FAMIL1 | -0.0218 | -0.0117 | -0.0138 | -0.0138 | -0.0042 |
| LOCUS1 | -0.0133 | -0.0024 | -0.0076 | -0.0076 | -0.0114 |
| TNSCLAS1 | -0.0130 | -0.0261* | -0.0012 | -0.0012 | -0.0092 |
| USEINTC1 | -0.0112 | -0.0010 | -0.0092 | -0.0092 | -0.0122 |
| CONCPTT1 | -0.0107 | -0.0121 | -0.0130* | -0.0130* | -0.0122 |
| DEPRESS1 | 0.0178 | -0.0155 | -0.0187 | -0.0187 | -0.0033 |
| SATFSH1 | -0.0210 | -0.0236 | -0.0064 | -0.0005 | -0.0234* |
| INTRSH1 | -0.0061 | -0.0092 | -0.0108 | -0.0068 | -0.0139* |
| BTSAFE1 | -0.0091 | -0.0182 | -0.0068 | -0.0266* | -0.0150 |
| OVRWGT1 | -0.0102 | -0.0046 | -0.0151 | -0.0009 | -0.0148 |
| UNATRT1 | -0.0092 | -0.0120 | -0.0067 | -0.0062 | -0.0036 |
| ABSTSH1 | 0.1717*** | 0.0078 | 0.0571*** | -0.0066 | -0.1510*** |
| LATESH1 | 0.0816*** | 0.2460* | 0.0570*** | -0.0012 | -0.0036 |
| CUTCLS1 | 0.0614*** | 0.2964*** | 0.2607*** | 0.0630*** | -0.0466*** |
| NOTPREP1 | 0.0247* | 0.0556*** | 0.0440*** | 0.2765*** | -0.0063 |
| | | 0.0509*** | | | |



BEST COPY AVAILABLE

TABLE 3.4 -- continued

FEEDBACK EFFECTS OF ENDOGENOUS VARIABLES

UNSTANDARDIZED COEFFICIENTS

MALES

| | ABSTSH2 | LATESH2 | CUTCLS2 | NOTPREP2 | DROPOUT2 |
|---|---|---|---|---|---|
| PARENT1 | 0.1051 | -0.2513 | 0.1306* | -0.0141 | 0.0022 |
| MARRIED1 | -0.0338 | -0.5316 | -0.1043 | 0.1750 | 0.0563 |
| SPOUSE1 | -1.0183 | -0.2337 | 0.0199 | -0.0634 | 0.0848 |
| CHILDW1 | 0.7126 | 0.4155 | -0.0819 | 0.0660 | -0.0292 |
| SPHSCOL1 | 0.0380 | 0.1590 | 0.0337** | 0.0261 | -0.0149 |
| SREPDS1 | -0.0108 | 0.0155 | -0.0036 | -0.0045 | 0.0045 |
| SRFRDS1 | 0.0061 | -0.1155 | -0.0124 | -0.0200* | 0.0011 |
| NRULSTU1 | -0.0092 | -0.0355 | -0.0027 | -0.0048 | -0.0063* |
| NEXCUER1 | -0.0013 | -0.0073 | 0.0028 | -0.0006 | -0.0011 |
| NEXCUER2 | -0.0237 | -0.0130 | -0.0039** | -0.0021 | 0.0034*** |
| GAHSDC1 | 0.2032 | 0.1547 | -0.0102 | -0.0180 | 0.0232 |
| TAHSDC1 | 0.2638 | 0.4020 | 0.0069 | 0.0242 | -0.0276 |
| PARINT1 | -0.3284 | -0.2358 | -0.0255 | -0.0197 | 0.0045 |
| PARDCAR1 | 0.0088 | 0.1195 | -0.0295 | 0.0441 | -0.0009 |
| NOREL1 | -0.1858 | 0.1343 | -0.0048 | -0.0161 | 0.0222 |
| CATHL1 | 0.0201 | 0.2369 | 0.0110 | 0.0122 | -0.0061 |
| JEWISH1 | 0.3024 | 0.6223 | 0.0336 | -0.0051 | 0.0114 |
| PROREL1 | -0.0440* | 0.0015 | -0.0031 | -0.0010 | -0.0016 |
| RELPRS1 | 0.0088 | -0.0514 | -0.0133 | 0.0063 | -0.0019 |
| ACADMIC1 | -0.0491 | -0.1355 | -0.0086 | -0.0083 | -0.0048 |
| AVGRAD1 | -0.1880** | -0.2550*** | -0.0300*** | -0.0510*** | -0.0357*** |
| VERBAL1 | 0.0030 | 0.0199* | 0.0011 | 0.0010 | -0.0003 |
| MATHSD21 | -0.0060 | 0.0019 | -0.0009 | 0.0026* | 0.0002 |
| OCCASP1 | 0.0009 | 0.0035 | 0.0002 | 0.0000 | -0.0001 |
| EDASP1 | 0.0019 | -0.0083 | -0.0023 | -0.0011 | -0.0040* |
| EDASPM1 | 0.0044 | 0.0308 | 0.0034 | -0.0006 | -0.0006 |
| XPECGR21 | 0.3119* | 0.2371 | 0.0406** | 0.0282 | -0.0942*** |
| XPECLV21 | 0.0242 | 0.1673 | 0.0166 | 0.0099 | -0.0733*** |
| POPULR1 | -0.0554 | 0.0480 | 0.0185 | 0.0350* | -0.0107 |
| REGDAT21 | 0.0178 | -0.1240 | -0.0018 | -0.0195 | 0.0292*** |
| TIMWFRM1 | 0.1332*** | 0.1241*** | 0.0187*** | 0.0052 | -0.0092*** |
| TYPFRND1 | -0.1038 | -0.1219 | -0.0002 | -0.0690** | -0.0127 |
| SOIMAGE1 | 0.0846 | 0.1347 | 0.0112 | 0.0005 | -0.0048 |
| TIMP TYP | 0.1936 | 0.1401 | 0.0240 | 0.0255 | -0.0252*** |
| TIMWPAR1 | 0.0036 | -0.0840 | -0.0190** | -0.0019 | -0.0002 |
| WORKVAL1 | 0.2468 | 0.2914 | 0.0268 | -0.0018 | 0.0022 |
| COMMUN1 | 0.0350 | -0.0288 | -0.0129 | -0.0078 | 0.0059 |
| FAMILY1 | -0.0895 | -0.1023 | -0.0077 | -0.0221 | -0.0116 |
| LOCUS1 | 0.0613 | 0.0685 | 0.0052 | -0.0170 | -0.0106 |
| TWSCLAS1 | -0.0185 | 0.0818 | 0.0024 | 0.0207 | -0.0063 |
| USEINTC1 | -0.2444 | -0.0057 | -0.0058 | -0.0431 | 0.0055 |
| CONCPT1 | 0.0253 | -0.0514 | -0.0003 | -0.0113 | 0.0041 |
| DEPRESS1 | -0.0746 | 0.0070 | 0.0028 | -0.0005 | 0.0002 |
| SATFSH1 | -0.1125 | -0.2053** | -0.0065 | -0.0115 | -0.0124 |
| INTRSH1 | -0.1150 | -0.2192 | -0.0147 | -0.0248 | -0.0008 |
| NTSAFE1 | -0.0618 | -0.1482 | -0.0167 | -0.0069 | -0.0085 |
| OVRWGT1 | 0.0457 | -0.1176* | -0.0069 | 0.0272 | -0.0084 |
| UNATRT1 | -0.1023 | -0.0840 | -0.0094 | 0.0002 | -0.0007 |
| ABSTSH1 | 0.1448*** | -0.0102 | 0.0002 | -0.0030 | 0.0105*** |
| LATESH1 | 0.0562*** | 0.2585*** | 0.0037** | 0.0040* | 0.0014 |
| CUTCLS1 | 0.7774*** | 0.7826*** | 0.2295*** | 0.0413** | 0.0312*** |
| NOTPREP1 | 0.2469*** | 0.4877*** | 0.0317*** | 0.2124*** | -0.0005 |



BEST COPY AVAILABLE

TABLE 3.4 -- continued

FEEDBACK EFFECTS OF ENDOGENOUS VARIABLES

UNSTANDARDIZED COEFFICIENTS

FEMALES

| | ABSTSH2 | LATESH2 | CUTCLS2 | NOTPREP2 | DROPOUT2 |
|---|---|---|---|---|---|
| PARENT1 | 0.5099 | 0.2308 | 0.0205 | 0.0288 | 0.0354 |
| MARRIED1 | -1.3209 | 0.3901 | 0.0504 | 0.0154 | 0.1229* |
| SPOUSE1 | 1.6247* | -0.4421 | -0.0450 | 0.0861 | 0.0048 |
| CHILDW1 | -0.3796 | -0.5128 | -0.0306 | -0.0325 | 0.1239*** |
| SPHSCOL1 | 0.0968 | -0.1114 | 0.0308* | 0.0048 | -0.0030 |
| SREPDS1 | -0.1284* | -0.0243 | -0.0065 | -0.0035 | 0.0019 |
| SRFRDS1 | -0.0020 | -0.1216* | -0.0130 | -0.0040 | 0.0041 |
| NRULSTU1 | 0.0348 | -0.0016 | -0.0101** | -0.0057 | 0.0005 |
| NEXCUER1 | 0.0336 | 0.0307 | 0.0023 | 0.0017 | -0.0011 |
| NEXCUER2 | -0.0487*** | -0.0135 | -0.0033* | -0.0016 | 0.0055*** |
| GAHSDC1 | 0.0329 | -0.3212 | -0.0312 | -0.0301 | 0.0025 |
| TAHSDC1 | 0.0177 | 0.3076 | 0.0397 | 0.0170 | -0.0013 |
| PARINT1 | -0.3254 | -0.1696 | -0.0149 | -0.0153 | -0.0250* |
| PARDCAR1 | 0.1374 | -0.2587 | -0.0163 | -0.0164 | 0.0086 |
| NOREL1 | 0.0674 | 0.3445 | 0.0027 | -0.0146 | 0.0285* |
| CATHL1 | 0.0214 | 0.1448 | 0.0177 | -0.0226 | -0.0077 |
| JEWISH1 | 0.7307* | 0.0472 | 0.0203 | -0.0271 | -0.0084 |
| PROREL1 | -0.0122 | 0.0065 | -0.0030 | -0.0015 | -0.0026* |
| RELPRS1 | -0.0697 | -0.0717 | -0.0077 | -0.0061 | 0.0004 |
| ACADMIC1 | 0.0249 | 0.0210 | -0.0028 | -0.0021 | -0.0043 |
| AVGRAD1 | -0.2775*** | -0.2251*** | -0.0195* | -0.0465*** | -0.0292*** |
| VERBAL1 | 0.0116 | 0.0178* | 0.0023** | 0.0015*** | 0.0003 |
| MATHSD21 | -0.0178* | 0.0051 | -0.0015 | -0.0028*** | -0.0002 |
| OCCASP1 | 0.0000 | -0.0006 | -0.0002 | -0.0001 | -0.0003* |
| EDASP1 | -0.0074 | 0.0097 | 0.0018 | -0.0016 | -0.0018 |
| EDASPM1 | 0.0147 | 0.0136 | -0.0020 | 0.0008 | -0.0015 |
| XPECGR21 | 0.1549 | 0.1557 | 0.0303 | 0.0142 | -0.1110*** |
| XPECLV21 | 0.0929 | 0.0269 | 0.0219 | -0.0071 | -0.0714*** |
| POPULR1 | -0.0659 | 0.1508 | 0.0271* | 0.0111 | -0.0188* |
| REGDAT21 | -0.0167 | -0.1170 | -0.0081 | -0.0102** | 0.0203*** |
| TIMWFRM1 | 0.0978** | 0.1257*** | 0.0236*** | 0.0070 | -0.0048 |
| TYPFRND1 | 0.0844 | 0.1895 | -0.0059 | -0.0027 | -0.0150 |
| SOIMAGE1 | 0.1156 | 0.0966 | 0.0079 | -0.0029 | 0.0000 |
| TIMP TYP | 0.2194 | 0.3690*** | 0.0258 | 0.0198 | -0.0199* |
| TIMWPAR1 | 0.1376* | 0.0387 | -0.0091 | -0.0068 | 0.0010 |
| WORKVAL1 | 0.2334 | 0.2838 | 0.0065 | -0.0124 | -0.0039 |
| COMMUN1 | 0.0157 | -0.1085 | 0.0015 | -0.0056 | 0.0071 |
| FAMILY1 | -0.2283 | -0.0260 | -0.0241 | -0.0102 | 0.0041 |
| LOCUS1 | 0.0895 | 0.1843* | 0.0160 | -0.0064 | 0.0046 |
| TWSCLAS1 | 0.1347 | -0.0108 | 0.0013 | 0.0015 | -0.0087 |
| USEINTC1 | -0.2284 | -0.2592 | -0.0209 | -0.0237 | -0.0141 |
| CONCPT1 | 0.0620 | -0.0822 | -0.0116 | -0.0243* | 0.0059 |
| DEPRESS1 | 0.1262 | 0.1736 | -0.0054 | -0.0160 | 0.0017 |
| SATFSH1 | -0.1683 | -0.0774 | -0.0096 | -0.0005 | -0.0168* |
| INTRSH1 | -0.0595 | -0.1852 | -0.0080 | -0.0302* | -0.0174* |
| NTSAFE1 | -0.1146 | 0.0606 | -0.0101 | 0.0014 | 0.0178 |
| OVRWGT1 | 0.0848 | -0.1045 | 0.0034 | 0.0065 | -0.0092 |
| UNATRT1 | -0.0262 | 0.0860 | 0.0084 | 0.0089 | -0.0028 |
| ABSTSH1 | 0.1630*** | 0.0236* | 0.0017 | -0.0001 | -0.0106*** |
| LATESH1 | 0.0843*** | 0.3204*** | 0.0071*** | 0.0056*** | -0.0003 |
| CUTCLS1 | 0.5338*** | 0.5058*** | 0.2688*** | 0.0406*** | 0.0302*** |
| NOTPREP1 | 0.1531* | 0.3305*** | 0.0324*** | 0.2168*** | -0.0029 |

NOTES:

1. VARIABLE DEFINITIONS

| | |
|---|---|
| ABSTSH2 | ABSENT FROM SCHOOL BUT NOT ILL, T2 |
| LATESH2 | LATE TO SCHOOL, T2 |
| CUTCLS2 | CUT CLASSES NOW AND THEN, T2 |
| NOTPREP2 | COMES TO CLASSES UNPREPARED, T2 |
| DROPOUT2 | RESPONDENT DROPPED OUT OF SCHOOL |
| PARENT1 | HAS AT LEAST ONE CHILD |
| MARRIED1 | HAS BEEN MARRIED |
| SPOUSE1 | SPOUSE LIVES IN R'S HOUSEHOLD |
| CHILDN1 | R'S OWN CHILD LIVES IN THE HOUSEHOLD |
| SPHSCOL1 | AVE STU RATING OF SCHOOL DISC PROBLEMS |
| SREFDS1 | STUDENT RATING OF EFFECTIVE DISCIPLINE |
| SRFRDS1 | STUDENT RATING OF FAIR DISCIPLINE |
| NRULSTU1 | STU REPORT OF N OF RULES ENFORCED |
| NEXCURR1 | INDEX OF PARTICIPATION IN EXCURR ACT, T1 |
| NEXCURR2 | INDEX OF PARTICIPATION IN EXCURR ACT, T2 |
| GAHSDC1 | GUIDANCE COUNSELOR DOESN'T CARE WHAT YO |
| TAHSDC1 | TEACHER DOESN'T CARE WHAT YOUTH DOES AF |
| PARINT1 | INDEX OF PARENT INTEREST IN STUDENT |
| PARDCAR1 | PARENT DOESN'T CARE WHAT STU DOES AFTER HIGH SCHOOL |
| NOREL1 | NO RELIGION |
| CATHL1 | CATHOLIC RELIGION |
| JEWISH1 | JEWISH RELIGION |
| FRQREL1 | REGULAR ATTENDENCE AT RELIGIOUS SERV |
| RELPRS1 | THINK OF YOURSELF AS RELIGIOUS |
| ACADMIC1 | ACADEMIC OR COLLEGE PREP HS PGM |
| AVGRAD1 | GRADES SO FAR IN HIGH SCHOOL |
| VERBAL1 | COMPOSITE VERBAL TEST SCORE |
| MATHSD21 | COMPOSITE MATH TEST SCORE |
| OCCASP1 | OCCUPATIONAL ASPIRATION AGE 30 |
| EDASPM1 | SCHOOLING YOUR MOTHER WANTS YOU TO GET |
| XPECGR21 | EXPECT TO GRADUATE FROM HS |
| XPECLY21 | WHEN EXPECT TO LEAVE HS |
| POPULR1 | POPULAR WITH OTHER STUDENTS |
| REGDAT21 | DATE REGULARLY, GOING STEADY |
| TIMWFRN1 | INDEX OF TIME SPENT WITH PEER FRIENDS |
| TYPFRND1 | INDEX OF TYPE OF PEER FRIENDS |
| SOIMAGE1 | INDEX OF PEERS' VIEWS OF SELF |
| TIMP TYP | TIMWFRN1*TYPFRND1 |
| TIMWPAR1 | INDEX OF TIME SPENT WITH PARENTS |
| WORKVAL1 | WORK ORIENTATION COMPOSITE SCALE |
| COMMUN1 | COMMUNITY ORIENTATION COMPOSITE SCALE |
| FAMILY1 | FAMILY ORIENTATION COMPOSITE SCALE |
| LOCUS1 | LOCUS OF CONTROL COMPOSITE SCALE |
| TNSCLAS1 | INDEX OF FEELING TENSE IN CLASSES |
| USEINTC1 | INDEX OF FEELING CLASSES ARE USEFUL |
| CONCPT1 | SELF-ESTEEM COMPOSITE SCALE |
| DEPRESS1 | INDEX OF FEELING DEPRESSED |
| SATFSH1 | SATISFIED WITH EDUCATION |
| INTRSH1 | INTERESTED IN SCHOOL |
| NTSAFE1 | DON'T FEEL SAFE AT THIS SCHOOL |
| OVRWGT1 | OVERWEIGHT |
| UNATRT1 | PHYSICALLY UNATTRACTIVE |
| ABSTSH1 | ABSENT FROM SCHOOL BUT NOT ILL, T1 |
| LATESH1 | LATE TO SCHOOL, T1 |
| CUTCLS1 | CUT CLASSES NOW AND THEN, T1 |
| NOTPREP1 | INDEX OF NOT PREPARED FOR CLASSES, T1 |

2. PROBABILITIES ARE FOR TWO-TAILED TESTS

| | |
|---|---|
| * | P < .01 |
| ** | P < .001 |
| *** | P < .0001 |

BEST COPY AVAILABLE

positive though they are not statistically significant when coming to class unprepared is the dependent variable and for females when dropping out is the outcome variable. Third, the educational expectation variables--When do you expect to leave school? and Do you expect to graduate from high school?--have the expected effects on dropping out; they are negative.

The "strain" hypothesis that the effects of aspiration and achievement should exhibit opposite signs is not supported. The usual measures of educational and occupational expectations exhibit no significant effects on the deviance measures. As noted, the two variables--when one expects to leave high school and whether one expects to graduate from high school--do affect dropping out. These effects are negative as are the effects of achievement (as measured by grades--the only significant effects of achievement). Thus the predicted sign reversal between aspiration and achievement is not supported when dropout is the outcome. For the other outcomes, none of the aspiration variables has a statistically significant effect for females; hence, the strain hypothesis is entirely unsupported for females. For males, the date one expects to leave high school has a small positive effect on truancy and on cutting class, and therefore exhibits the expected sign reversal with respect to the effects of grades. The coefficients on the aspiration variable are close to zero, however, and a consistent pattern across outcomes and sexes is not present. Consequently, the strain hypothesis is not well supported.

A somewhat different interpretation of the strain hypothesis, however, is consistent with the data. If one assumes fairly universal acceptance of the desirability of getting good grades in school (student protestations to the contrary notwithstanding), then the negative impact of grades can be interpretated as the result of frustration over failure to meet a socially accepted goal. Of course, pending further empirical data, this interpretation must be viewed as speculative.

It is particularly interesting that the only variable describing peer associations that has consistent effects on the deportment outcomes is the index of time spent with friends. The degree to which one's peers conform to school norms does not exhibit a pattern of strong effects. Neither does the interaction term defined by the product of time with peer friends and type of friend (degree of friends' conformity to school norms). The youth's view of how other students see him/her is not important in the models either. Having a steady date does, however, tend to increase the likelihood of dropping out of school, for both males and females. But it doesn't affect the other behaviors.

The test scores for math and verbal achievement generally do not exercise strong effects on deportment, but most of the coefficients that are statistically significant imply that whatever is measured by achievement tests tends to stimulate misbehavior. The coefficients on both math and verbal tests for females coming to class unprepared are fairly strong. These results are not predicted by any theory of deviance. It is likely that they are due to an ability factor measured by the tests. With grades constant, one must exert less effort as ability increases, hence the consequences of coming to class unprepared would be negatively related to test scores.

The largest effects involving the deportment variables are associated with feedbacks among the deportment variables. This was unambiguously the case in

the estimates based on the full model, as shown in the bottom rows of table 3.4. In the interest of parsimony, however, a trimmed model was estimated that eliminates most of the endogenous variables. All five deportment outcomes were retained in the trimmed model. Time spent with friends and grades were retained. All possible feedbacks involving these variables were estimated using the lagged regression methodology. The background and school variables in previous models were retained as statistical controls, but their coefficients are not tabulated. Additionally, two expectation variables were included on the right side of these models--Expect to graduate from high school and When expect to leave high school. These two variables are included primarily as strategic controls in the dropout equations, in lieu of having a lagged measure of dropout. Their coefficients are not tabulated, however. Table 3.5 displays the estimates.

As in the full model, the dominant coefficients are associated with effects of the deportment variables on each other. The primary missing links are the effects of truancy on in-school misbehaviors--tardiness, class cutting, and going to class unprepared. Truancy has a very strong effect on dropping out, however. Also, all three in-school deportment variables are associated with positive effects on truancy. By comparison to the effects of truancy dropout, the other effects are small. These patterns are clearly discernible for both females and males.

The strohg impact of grades on all five deportment variables is even clearer in the trimmed model than in the full model. Poor grades stimulate misbehavior and dropping out. Similarly, time spent with friends stimulates misbehavior and dropping out, except that the effects of time with friends on going to class unprepared are small and not statistically significant. The results in the trimmed model closely parallel those in the full model.

With one exception, the effects of grades and time with friends on the in-school deportment variables are stronger than the corresponding reverse-direction effects. The exception is that <u>not</u> coming to classes prepared increases time spent with friends, while the opposite effect is nearly zero. Finally, grades affect time spent with friends; the effect is negative. Time spent with friends also exercises a negative effect on grades, but the magnitude of this effect is smaller than the opposite direction effect. Remarkably, all these patterns hold for both sexes, thus improving confidence in the stability of the effects.

The predominant paths in these findings can be reduced to the following parsimonious model (figure 3.7):

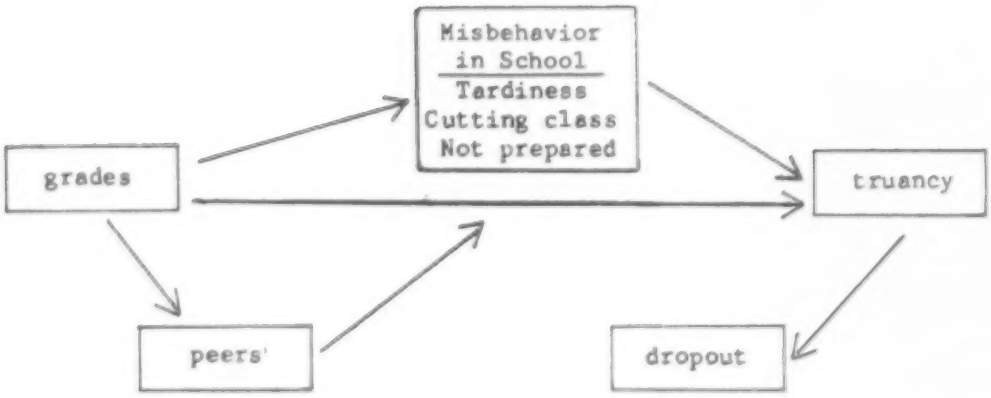


Figure 3.7. Parsimonious version of model of deviance in high school

In this simplified representation, grades directly affect association with peers, misbehavior in school, and truancy. Association with peers directly affects misbehavior, and truancy. Misbehavior affects truancy, and truancy is by far the dominant factor in determining whether one drops out. Other paths are associated with significant effects, but those pictured are the main ones.

## Summary and Conclusions

This study examines the effects of a broad range of variables on relatively mild forms of deviance associated with being in high school. Five measures are used as outcomes--truancy, tardiness, cutting class, coming to classes unprepared, and dropping out of school. Although theories of deviant behavior are targeted to violations of more serious norms than these, other sources of theorizing on the topic are scarce. Major theories of deviant behavior therefore are used as a basis for constructing a specification of the empirical models. Background variables and school variables are defined as exogenous. A large number of endogenous variables are included as predictors of deviances because their importance is indicated by one or more theoretical points of view. These variables include achievements in school (grades, test scores), associations with peers, aspirations for future education and occupation, participation in extracurricular activities at school, attitudes such as commitment to home and family, indicators of psychological stress, attachment to school, and religion.

The effects of background and school variables in reduced-form models is uniformily low, but the patterns of significant coefficients are reasonable though somewhat erratic. Of the numerous endogenous variables included (other than deportment variables), grade average in school and time spent with one's peers are the primary determinants of the five forms of school deviance. The effects of the deviance measures on each other are by far the strongest and most consistent, however.

TABLE 3.5

FEEDBACK EFFECTS AMONG ENDOGENOUS VARIABLES:
TRIMMED MODEL

STANDARDIZED COEFFICIENTS

MALES

| | AVGRAD2 | TIMWFRN2 | ABSTSH2 | LATESH2 | CUTCLS2 | NOTPREP2 | DROPOUT2 |
|---|---|---|---|---|---|---|---|
| AVGRAD1 | 0.5985*** | -0.0460*** | -0.0501*** | -0.0473*** | -0.0685*** | -0.0825*** | -0.1142*** |
| TIMWFRN1 | -0.0253** | 0.2656*** | 0.0533*** | 0.0409*** | 0.0634*** | 0.0103 | 0.0541*** |
| ABSTSH1 | 0.0400*** | -0.0018 | 0.1554*** | -0.0079 | 0.0038 | -0.0194 | 0.1533*** |
| LATESH1 | 0.0045 | 0.0000 | 0.0609*** | 0.2491*** | 0.0387*** | 0.0339** | 0.0228* |
| CUTCLS1 | -0.0097 | 0.0264* | 0.0926*** | 0.0789*** | 0.2357*** | 0.0427*** | 0.0497*** |
| NOTPREP1 | -0.0467*** | 0.0197 | 0.0427*** | 0.0719*** | 0.0536*** | 0.2643*** | -0.0009 |

STANDARDIZED COEFFICIENTS

FEMALES

| | AVGRAD2 | TIMWFRN2 | ABSTSH2 | LATESH2 | CUTCLS2 | NOTPREP2 | DROPOUT2 |
|---|---|---|---|---|---|---|---|
| AVGRAD1 | 0.6239*** | -0.0370*** | -0.0721*** | -0.0251* | -0.0385*** | -0.0517*** | -0.0989*** |
| TIMWFRN1 | -0.0228** | 0.3220*** | 0.0395*** | 0.0425*** | 0.0757*** | 0.0040 | 0.0303** |
| ABSTSH1 | 0.0272** | 0.0122 | 0.1779*** | 0.0228 | 0.0180 | -0.0002 | 0.1638*** |
| LATESH1 | -0.0137 | -0.0139 | 0.0840*** | 0.3007*** | 0.0604*** | 0.0485*** | -0.0003 |
| CUTCLS1 | -0.0188* | 0.0398*** | 0.0661*** | 0.0614*** | 0.2719*** | 0.0478*** | 0.0523*** |
| NOTPREP1 | -0.0321*** | 0.0371*** | 0.0264* | 0.0559*** | 0.0510*** | 0.2916*** | -0.0034 |

UNSTANDARDIZED COEFFICIENTS

MALES

| | AVGRAD2 | TIMWFRN2 | ABSTSH2 | LATESH2 | CUTCLS2 | NOTPREP2 | DROPOUT2 |
|---|---|---|---|---|---|---|---|
| AVGRAD1 | 0.5024*** | -0.0760*** | -0.2470*** | -0.2625*** | -0.0383*** | -0.0584*** | -0.0417*** |
| TIMWFRN1 | -0.0121** | 0.2499*** | 0.1496*** | 0.1292*** | 0.0202*** | 0.0042 | 0.0112*** |
| ABSTSH1 | 0.0065*** | -0.0006 | 0.1481*** | -0.0085 | 0.0304 | -0.0027 | 0.0108*** |
| LATESH1 | 0.0007 | 0.0000 | 0.0574*** | 0.2648*** | 0.0041*** | 0.0046** | 0.0016* |
| CUTCLS1 | -0.0149 | 0.0795* | 0.8311*** | 0.7984*** | 0.2402*** | 0.0550*** | 0.0331*** |
| NOTPREP1 | -0.0466*** | 0.0386 | 0.2502*** | 0.4747*** | 0.0357*** | 0.2225*** | -0.0004 |

UNSTANDARDIZED COEFFICIENTS

FEMALES

| | AVGRAD2 | TIMWFRN2 | ABSTSH2 | LATESH2 | CUTCLS2 | NOTPREP2 | DROPOUT2 |
|---|---|---|---|---|---|---|---|
| AVGRAD1 | 0.5288*** | -0.0643*** | -0.3498*** | -0.1271* | -0.0221*** | -0.0317*** | -0.0359*** |
| TIMWFRN1 | -0.0113** | 0.3286*** | 0.1125*** | 0.1264*** | 0.0255*** | 0.0014 | 0.0065** |
| ABSTSH1 | 0.0045** | 0.0041 | 0.1669*** | 0.0228 | 0.0020 | 0.0000 | 0.0115*** |
| LATESH1 | -0.0025 | -0.0052 | 0.0868*** | 0.3250*** | 0.0074*** | 0.0063*** | 0.0000 |
| CUTCLS1 | -0.0286* | 0.1241*** | 0.5751*** | 0.5584*** | 0.2802*** | 0.0525*** | 0.0340*** |
| NOTPREP1 | -0.0348*** | 0.0826*** | 0.1639* | 0.3631*** | 0.0375*** | 0.2286*** | -0.0016 |

NOTES:

1. VARIABLE DEFINITIONS

| | |
|---|---|
| AVGRAD2 | GRADES SO FAR IN HIGH SCHOOL, T2 |
| TIMWFRN2 | TIME SPENT WITH PEER FRIENDS, T2 |
| ABSTSH2 | ABSENT FROM SCHOOL BUT NOT ILL, T2 |
| LATESH2 | LATE TO SCHOOL, T2 |
| CUTCLS2 | CUT CLASSES NOW AND THEN, T2 |
| NOTPREP2 | COMES TO CLASSES UNPREPARED, T2 |
| DROPOUT2 | RESPONDENT DROPPED OUT OF SCHOOL |
| AVGRAD1 | GRADES SO FAR IN HIGH SCHOOL, T1 |
| TIMWFRN1 | TIME SPENT WITH PEER FRIENDS, T1 |
| ABSTSH1 | ABSENT FROM SCHOOL BUT NOT ILL, T1 |
| LATESH1 | LATE TO SCHOOL, T1 |
| CUTCLS1 | CUT CLASSES NOW AND THEN, T1 |
| NOTPREP1 | COMES TO CLASSES UNPREPARED, T1 |

2. PROBABILITIES ARE FOR TWO-TAILED TESTS

| | |
|---|---|
| * | P < .01 |
| ** | P < .001 |
| *** | P < .0001 |

BEST COPY AVAILABLE

The picture that emerges from these results is one in which school deviance, at least in the relatively mild forms studied here, is generated by the competitive structure of the grading system and by the reactions of individuals and their peers to it. Once deviant behavior of one type is established, it tends to stimulate other types of deviance in a system of mutually reinforcing feedbacks. This pattern of deviance substantially raises the chance of dropping out of school. For instance, the likelihood that a typical male will drop out of school is raised from 9 percent to 13 percent if his absences per semester increase from about 3 to about 7 (from the mean to 1 standard deviation above). Although background and school characteristics exercise some scattered effects on school deviance, it is not possible to extract from the variables explicitly included in the present analysis a clear picture of how schools can influence their students' behavior.

The extent to which it is important to student achievement that students conform to school norms is also unclear. The effects of grades on deviance, for example, are substantially stronger than the effects of deviance (except dropping out, of course) on grades. Also, none of the effects of deviance on test score performance is large, and only one is statistically significant.

Although the primary goal of this paper is not to test theories of deviance, those theories do provide important organizing framework for the analyses. It therefore is useful to note the implications of the findings for these theories. We find fairly clear support for the effects of peers on deviance, thus implying support for differential association theory. We do not test the detailed psychological specifications of that theory however (see Sutherland and Cressey 1978; Jensen 1972; Matsueda 1982). Also, the relatively strong impact of grades on deviance found in this paper suggests some degree of support for strain theory--on the assumption that the mechanism accounting for the effects of grades is strain produced by failure to achieve socially prescribed goals (high grades). The version of strain theory proposed by Elliott and his coworkers (Elliott anf Voss 1974; Elliott, Ageton, and Canter 1979) defined by effects of the discrepancy between aspiration and achievement is not supported in these data however.

REFERENCE


Abramowitz, S., and Tenenbaum, E. High School '77: A Survey of Public Secondary School Principals. Washington, DC: National Institute of Education, 1977.

Alexander, Karl L.; Cook, Martha A.; and McDill, Edward L. "Curriculum Tracking and Educational Stratification: Some Further Evidence." American Sociological Review 41 (1976): 144-152.

Alexander, Karl L.; McPartland, James M.; and Cook, Martha A. "Using Standardized Test Performance in School Effects Research." In Vol. 2 of Research in Sociology of Education and Socialization: Research on Education Organizations, edited by Alan C. Kerckhoff, pp. 1-34, 1981.

Alexander, Karl L. and Pallas, Aaron M. "School Sector and Cognitive Performance: When Is a Little a Little?" Sociology of Education 58 (no. 2), 1985: 115-127

Anderson, Carolyn S. "The Search for School Climate: A Review of the Research." Review of Educational Research 52, no. 3 (Fall 1982): 368-420.

Austin, G. R. "Exemplary Schools and Their Identification." New Directions for Testing and Measurement 10 (1981): 31-48.

Averch, Harvey A.; Carroll, Stephen J.; Donaldson, Theodore S.; Klesing, Herbert J.; and Pincus, John. How Effective Is Schooling? A Critical Review and Synthesis of Research Findings. Santa Monica, CA: Rand, 1972.

_____. How Effective Is Schooling? A Critical Review of Research. Englewood Cliffs, New Jersey: Educational Technology Publications, 1974.

Bachman, Jerald G.; Green, S.; and Wirtanen, I.D. "Dropping Out--Problem or Symptom?" Youth in Transition, vol. III, 1971.

Barker, R., and Gump, R. Big School, Small School: High School Size and Student Behavior. Stanford, CA: Stanford Univeristy Press, 1964.

Becker, Gary S.; and Landes, William M., eds. Essays in the Economics of Crime and Punishment. New York: Columbia University Press, 1974.

Blalock, Hubert M., Jr. "The Identification Problem and Theory Building: The Case of Status Inconsistency." American Sociological Review 31 (1966): 52-61.

_____. "Status Inconsistency, Social Mobility, Status Integration, and Structural Effects." American Sociological Review 32 (1967): 790-801.

Borus, M.; Crowley, J.; Rumberger, R.; Santos, R.; and Shapiro, D. Pathways to the Future: A Longitudinal Study of Young Americans. Columbus: The Ohio State University, Center for Human Resource Research, 1980.

Bowles, S., and Gintes, H. Schooling in Capitalist America: Educational Reform and the Contradictions of Economic Life. New York: Basic Books, 1976.

Brookover, Wilbur; Beady, Charles; Flood, Patricia; Schweitzer, John; and Wisenbaker, Joe. School Social Systems and Student Achievement: Schools can Make a Difference. New York: Praeger Publishers, 1979.

Carnoy, M., and Levin, H. M. "Introduction: The Limits and Educational Reform." In The Limits of Educational Reform, edited by M. Carney, pp. 1-226. New York: Longman, 1976.

Chambliss, William J. "The Saints and the Roughnecks." Society 11 (December 1973): 24-31.

Clark, D. L.; Lotto, L. S.; and McCarthy, M. M. "Factors Associated with Success in Urban Elementary Schools." Phi Delta Kappan 61 (1980): 467-470.

Cloward, F. A., and Ohlin, Lloyd E. Delinquency and Opportunity. New York: The Free Press of Glencoe, 1960.

Cohen, Albert K. Delinquent Boys. New York: The Free Press of Glencoe, 1955.

Coleman, James S. The Adolescent Society: The Social Life of the Teenager and Its Impact on Education. New York: Free Press, 1961.

_____. "The Mathematical Study of Change." In Methodology in Social Research, edited by Herbert N. Blalock and Ann B. Blalock. New York: McGraw-Hill, 1968.

Coleman, James S.; Hoffer, Thomas; and Kilgore, Sally. "Achievement and Segregation in Secondary Schools: A Further Look at Public and Private School Differences." Sociology of Education 55 (1982b): 162-182.

_____. "Cognitive Outcomes in Public and Private Schools." Sociology of Education 55 (1982a): 65-76.

_____. High School Achievement: Public Catholic, and Private Schools Compared. New York: Basic Books, 1982.

_____. Report to the National Center for Education Statistics. Chicago: National Opinion Research Center, 1981.

Coleman, James S.; Campbell, E. Q.; McPartland, J.; Mood, A.N.; Weinfeld, F.D.; and York, R.L. Equality of Educational Opportunity, Washington, DC: U.S. Government Printing Office, 1966.

Colvin, Mark, and Pauly, John. "A Critique of Criminology: Toward an Integrated Structural Marxist Theory of Delinquency Production." American Journal of Sociology 89 (3) (November 1983): pp. 513-551.

Denham, C., and Lieberman, A., eds. Time to Learn. Washington DC: National Institute of Education, Government Printing office, 1980.

DiPrete, Thomas A. Discipline, Order and Student Behavior in American High Schools. Prepared for the National Center for Educationa Statistics under contract DE-300-78-0208 with the U.S. Department of Education. Washington, DC: National Opinion Research Center, November 1981.

Edmonds, Ronald E. "Some Schools Work and More Can." Social Policy 9 (March-April 1979): 28-32.

Elliott, Delbert S.; Ageton, Suzanne S.; and Canter, Rachelle J. "An Integrated Theoretical Perspective on Delinquent Behavior." Journal of Research in Crime and Delinquency 16 (1979): 3-27.

Elliott, Delbert S., and Voss, Harwin L. Delinquency and Dropout. Lexington, MA: D.C. Heath and Company, 1974.

Ehrlich, Isaac. "The Economic Approach to Crime: A Preliminary Assessment." In Criminolgy Review Yearbook, vol. 1, Messinger, S.L. and Egan Bittner, editors. Beverly Hills, CA: Sage Publishing, 1979, pp. 25-29.

Fogelman, K.; Tibbenham, A.; and Lambert, L. "Absence From School: Findings from the National Child Development Study." In Out of School, edited by L. Hersov and I. Berg. Chichester: Wiley, 1980.

Garbarino, James. "The Human Ecology of School Crime: A Case for Small Schools," in School Crime and Disruption, Wenk, Ernst, and Nora Harlow, editors. Davis, California: Responsible Action, 1978.

Glasman, Naftaly S., and Biniaminov, Israel. "Input-Output Analyses of Schools." Review of Educational Research 51, no. 4 (Winter 1981): 509-539.

Goodlad, John. "An Agenda for Improving our Schools." Executive Review 2 (8) May 1982.

_____. An Agenda for Improving Our Schools. Paper presented at the Annual Meeting of the 35th National Conference of Professors of Educational Administration, 1981.

Gottfredson, Gary, and Daizer. Disruption in Six Hundred High Schools. ERIC Document: ED183701, 1979.

Gray, G., Smith, A.; and Rutter, M. "School Attendance and the First Year of Employment." In Out of School, edited by L. Hersov and I. Berg. Chichester: Wiley, 1980.

Greeley, Andrew. Catholic High Schools and Minority Students. New Brunswick, New Jersey: Transaction, 1982.

Greenberg, David F. "Delinquency and the Age Structure of Society." Criminology Review Yearbook. Beverly Hills, CA: Sage, 1979.

Hannan, Michael T., and Young, Alice A. "Estimation in Panel Models: Results on Pooling Cross-Sections and Time Series." In Sociological Methodology 1977, edited by David R. Heise, pp. 52-83. San Francisco, CA: Jossey-Bass, 1977.

Hargreaves, D. H. Social Relations in a Secondary School. London: Routledge and Kegan Paul, 1967.

Hauser, Robert M. "Contextual Analysis Revisited." Sociological Methods and Research 2 (3) 1974: 365-375.

_____. Socioeconomic Background and Educational Performance. Washington, DC: American Sociological Association, 1971.

_____. "Context and Consex: A Cautionary Tale." American Journal of Sociology 75, (2, part 4) 1970: 645-664.

Hawkes, Roland K. "Norms, Deviance and Social Control: A Mathematical Elaboration of Concepts," American Journal of Sociology, vol. 80 (no. 4), May 1975: 886-909.

Heyns, Barbara. "Social Selection and Stratification within Schools." American Journal of Sociology 79 (1974): 1434-1451.

_____. Summer Learning and the Effects of School. New York: Academic Press, 1978.

Hirschi, Travis. Causes of Delinquency. Berkeley: University of California Press, 1969.

Hoffer, Thomas; Greeley, Andrew M.; and Coleman, James S. "Achievement Growth in Public and Catholic Schools." Sociology of Education 58 (April 1985): 74-97.

Hollenbeck, K. and Smith, B. "Selection of Young Workers: The Influence of Applicants' Education and Skills in Employability Assets by Employers." Columbus: The National Center for Research in Vocational Education, 1984.

Hope, Keith. "Models of Status Inconsistency and Social Mobility Effects." American Sociological Review 40 (1975): 322-638.

Hotchkiss, Lawrence. "Translation of Discrepency Theory into Testable Form." Columbus, Ohio: The National Center for Research in Vocational Education, The Ohio State University, 1985.

Jencks, Christopher. "How Much Do High School Students Learn? Sociology of Education 58 (no. 2), 1985: 128-135.

Jensen, Gary F. "Parents, Peers, and Delinquent Action: A Test of the Differential Association Perspective." American Journal of Sociology 78, no. 3 (November 1972): 562-575.

Karweit, Nancy L. Rainy Days and Mondays: Analysis of Factors Related to Absence From School. Baltimore: Johns Hopkins University, Center for the Social Organization of Schools, 1973. ERIC No. ED 086 927.

_____. "A Reanalysis of the Effect of Quantity of Schooling on Achievement." Sociology of Education 49 (July 1976): 236-246.

_____. "Time in School." Research in Sociology of Education and Socialization: Research on Educational Organizations, edited by Alan C. Kerckhoff, pp. 77-110, 1981.

Kessler, Ronald C., and David F. Greenberg. Linear Panel Analysis: Models of Quantitative Change. New York: Academic Press, 1981.

Kornhauser, Ruth R. Social Sources of Delinquency: An Appraisal of Analytic Models. Chicago: University of Chicago Press, 1978.

Lenski, Gerhard E. "Status Crystallization: A Non-Vertical Dimension of Social Status." American Sociological Review 19 (1954): 405-413.

Liker, Jeffrey K.; Augustyniak, Sue; and Duncan, Greg J. "Panel Data and Models of Change: A Comparison of First Difference and Conventional Two-Wave Models." Social Science Research 14 (1985): 80-101.

Lindsay, P. "The Effect of High School Size on Student Participation, Satisfaction, and Attendance." Education Evaluation and Policy Measurement 7, no. 1 (1982): 57-65.

Liska, Allen E., and Reed, Mark D. "Ties to Conventional Institutions and Delinquency: Estimating Reciprocal Effects." American Sociological Review 50, no. 4 (August 1985): 547-560.

Mackenzie, Donald E. "Research for School Improvement: An Appraisal of Some Recent Trends." Educational Researcher 12 (April 1983): 5-17.

Madaus, George F.; Airasian, Peter W.; and Kellaghan, Thomas. School Effectiveness: A Reassessment of the Evidence. New York: McGraw-Hill Book Co., 1980.

Matsueda, Ross L. "Testing Control Theory and Differential Association: A Causal Modeling Approach," American Sociological Review, vol. 47, August 1982: 489-504.

McDill, Edward L., and Rigsby, Leo C. Structure and Process in Secondary Schools: The Academic Impact of Educational Climates. Baltimore, MD: The Johns Hopkins University Press, 1973.

McDill, L.; Rigsby, L.; and Meyers, E. "Educational Climates of High Schools Their Effects and Sources," American Journal of Sociology 74 (1969): 567-586.

McPartland, J. M., and McDill, E. L. Violence in Schools: Perspectives, Programs and Positions. Lexington, MA: Lexington Books, 1977.

Miller, S. M. "Dropouts--A Political Problem." In Profile of the School Dropout, edited by David Schreiber. New York: Random House, 1967.

Morgan, David L., and Alwin, Duane F. "When Less is More: School Size and Student Social Participation." Social Psychology Quarterly 43 (1980): 241-252.

Murnane, R. The Impact of School Resources on the Learning of Ineer City Children. Cambridge, MA: Ballinger, 1975.

National Commission In Excellence in Education. "A Nation at Risk: The Imperative for Educational Reform." Reprinted in The Chronicle of Higher Education 26, no. 4 (May 1983): 11-16.

National Institute of Education. In vol. 1 of Violent Schools, Safe Schools The Safe Schools Study Report to the Congress. Washington, DC: U.S. Government Printing Office, 1978.

Nye, F. I. Family Relationships and Delinquent Behavior. New York: Wiley, 1958.

Phi Delta Kappa. Why Do Some Urban Schools Succeed? Phi Delta Kappa Study of Exceptional Urban Schools. Bloomington, Indiana, 1980.

Purkey, Stuart C., and Smith, Marshall S. "Effective Schools: A Review." Elementary School Journal 83 (1983): 427-452.

_____. "Too Soon to Cheer? Synthesis of Research on Effective Schools." Educational Leadership, 1982, 40 (3), 64-69.

Reckless, Walter Cade. The Crime Problem, 4th Edition New York: Wiley, 1967.

Reiss, A. J., Jr. "Delinquency as the Failure of Personal and Social Controls." American Sociological Review 16 (1951): 196-207.

Reynolds, D.: Jones, D.; Leger, S.; and Murgatroyd, S. "School Factors and Truancy." In Out of School, edited by L. Hersov and I. Berg. Chichester: Wiley, 1981.

Rosenholtz, Susan J. "Effective Schools: Interpreting the Evidence." American Journal of Education 93, no. 3 (1985): 352-387.

Rutter, M.; Maugham, B.; Mortimore, P.; Ouston, J.; and Smith A. Fifteen Thousand Hours: Secondary Schools and Their Effects on Children. Cambridge, MD: Harvard University Press, 1979.

Sellin, Thorsten. Culture Conflict and Crime. New York: Social Science Research Council, 1938.

Sellin, Thorsten and Wolfgang, M. E. eds. Delinquency: Selected Studies. New York: Wiley, 1969.

Smith, M. S. "Equality of Educational Opportunity: The Basic Findings Revisited." In On Equality of Educational Opportunity, edited by E. Mosteller and D. Moynihan. New York: Random House, 1972.

Stallings, Jane. "Allocated Academic Learning Time Revisited, or Beyond Time on Task." Educational Researcher 9, no. 11 (1980): 11-16.

Stennett, R. G., and Isaacs, L. M. Absence from School Patterns and Effects. London Board of Education (Ontario). Educational Research Services. 1980. ERIC No. ED 267 192.

Stinchcombe, A. L. Rebellion in a High School. Chicago: Quadrangle Books, 1964.

Sutherland, E. H., and Cressey, D. R. Principles of Criminology 5th Edition. Chicago: Lippincott, 1977.

Tinto, Vincent. "Dropout from Higher Education: A Theoretical Synthesis of Recent Research." Review of Educational Research 45, no. 1 (Winter 1975): 89-125.

Wiley, David E. "Another Hour, Another Day: Quantity of Schooling, a Potent Path for Policy." In Schooling and Achievement in American Society, edited by William H. Sewell, Robert M. Hauser, and David L. Featherman, pp. 225-266. New York: Academic Press, 1976.

Wiley, David E., and Harnischfeger, Annagret. "Explosion of a Myth: Quantity of Schooling and Exposure to Instruction." Studies of Educative Process, Report no. 8. Chicago: University of Chicago, 1974.

Willis, P. Learning to Labor: How Working Class Kids Get Working Class Jobs. New York: Columbia University Press, 1977.

CHAPTER 4

# POST-HIGH SCHOOL LABOR MARKET OUTCOMES AND SCHOOLING

Lawrence Hotchkiss

## Introduction

The previous chapters in this report have investigated factors that influence student outcomes measured while the students remained in school. This type of study lends important insight into the process that generates during the high school years the skills and attitudes that shape employability after leaving high school. In the context of employability development, however, the ultimate criteria must consist of labor market outcomes after leaving high school. There are two important respects in which examination of schooling effects on student knowledge, attitudes, and behaviors measured while the youth remain in high school may yield an incomplete picture of the employability enhancement function of schools. First, the individual outcomes measured during high school may not have the presumed effects on labor market experience after leaving high school. Second, the goals, organization, and function of high schools may contribute to the employment prospects of former students in ways that do not operate by changing the "employability profiles" of their students. Examples of this type of school effect include linkages to employers, provision of job information, and operation of a job placement service.

This chapter complements prior work on the employability development functions of schools in ways implied by both of these points. First, it examines effects of attitudes and deportment of youth, measured while they were seniors in high school, on employment outcomes after leaving high school. Second, it merges data from the Supplemental Survey of the High School and Beyond with these base year and first follow-up data on the senior cohort to examine effects of school services such as guidance, placement, linkage, and provision of job information on early labor market outcomes.

## Context

The labor market faced by youth immediately after leaving high school comprises a very special context, in contrast to the job and wage structures in the broader market for all adults (Freeman and Wise 1982; Hollingshead 1975). A composite of the employment experience of typical youth just after leaving high school is as follows: youth tend to take jobs with wages at or near the minimum, jobs that require little training, jobs with little chance for advancement, and jobs with little or no job security. In short, jobs in the "secondary labor market" (Doeringer and Piore 1971). Further, individual job attachment is low and youth shift jobs in a seemingly capricious fashion (Osterman 1980). At least some of these features of the youth labor market and the behavior of young workers have been known, or at least believed, for many decades. Wilms (1983), for example, cites opinions on the youth labor market that are similar to the description just given and that date back before 1910.

A number of factors are believed to influence the employment experience of youth just after they leave high school. Surveys often find that employers

put dependability as the most important characteristic of a new hire. Since training requirements are limited and tend to be firm-specific, willingness to work hard is the key ingredient (Wilms 1983, 1984; Lester 1954; Hollenbeck and Smith 1984). Other scholars have made similar claims on *a priori* grounds (DiPrete 1981; Bowles and Gintes 1976). Wilms (1983) gives the following characterizations:

> A majority of employers (63 percent) regarded good work habits and positive attitudes as crucial to an employee's success on the job. These attributes--typically defined as 'following the rules and working hard'--were considered especially important in entry-level jobs that require only a short vocational preparation time for the average worker to become productive. When asked to describe successful entry-level employees, 97 percent mentioned those who were hard working and reliable, rather than those with special skills. (p. 2)

Hollenbeck and Smith (1984) conducted interviews with employee representatives as part of their study of factors influencing hiring decisions of employers of young workers. They summarize their findings in the following terms:

> A large percentage of employers making comments about their experiences with young workers in entry level jobs expressed concerns over the poor attitudes exhibited by young people while at work. These comments included references to poor employee work habits, motivation, and responsibility. These characteristics include problems with workmanship, customer interaction, absenteeism, and tardiness (p. 75)

Of course, other characteristics also are mentioned by employers, the most common being proficiency in basic skills and communications (Wilms 1983). Vocational training is not often cited, and is not preferred over other types of secondary school study.

The empirical record regarding factors that affect entry-level employment experiences does not yield a clear picture. Kang (1984) and Kang and Bishop (1984) find that basic skills do not affect wage and hours, but vocational courses, good grades in vocational courses, and internal "locus of control" do have positive effects. Consistent findings that vocational study has strong positive effects on early labor market experience have not been reported, however, but some generalizations appear to have emerged in recent work. The most consistent finding is that young women with business and office skills earn more than noncollege women without such training (Campbell et al. 1982; Rumberger and Daymont 1982; Mertens and Gardner 1981; Grasso and Shea 1979). Also, vocational courses apparently are beneficial if the job one gets is related to the training (Rumberger and Daymont 1982).

Another consistent finding is that working part time during high school contributes to earnings after leaving high school (Stephenson 1981; D'Amico and Baker 1984; Ellwood 1981; Mortimer and Finch (forthcoming), Meyer and Wise 1982). Finally, race and sex differences in employment outcomes are strong (Freeman and Wise 1982). Wage differences by race have declined in recent years (Shapiro 1984), but large racial differences in unemployment rates per-

years (Shapiro 1984), but large racial differences in unemployment rates persist (Young 1982). Wage differences by gender are especially strong and appear to remain even within occupation (Treiman and Hartman 1981).

## Data

The data used in this paper are part of the High School and Beyond data base described in Chapter 1. The High School and Beyond (HSB) survey was sponsored by the National Center for Educaton Statistics, and the data collection was carried out by National Opinion Research Center (NORC). The HSB is a major longitudinal survey of high school youth. Base year data were collected in 1980, the first follow-up was completed in 1982, and the second follow-up was conducted in 1984. Plans call for additional follow-ups at 2-year intervals. The base year survey contains data describing over 58,000 student respondents, split between students who were sophomores (N = 30,030) in 1980 and those who were seniors (N = 28,240). All members of the base year sophomores cohort were included in the target sample for the first follow-up, but only about 13,000 of the senior cohort were included.

Students in the sample completed questionnaires at each wave of data collection. The base year questionnaires requested information about resondents' background, personal characteristics, school experiences, career aspirations, attitudes toward work, part-time work during high school, and a number of other topics. The first follow-up for the younger cohort repeated most of the questions in the base year questionnaire, thus permitting extensive analysis of change. The first and second follow-ups of the older cohort and second follow-up of the younger cohort requested detailed information regarding work, family formation, education, military service, and attitudes. In addition to the student questionnaire data, a lengthy questionnaire was completed by the principal or other administrator of each school during the first two waves of data collection, students completed cognitive tests, teachers completed a brief checklist in the base year only, and a subsample of parents completed base year questionnaires. (See Jones et al. 1983 and Frankel et al. 1981 for more detail).

In addition to the primary HSB data, five research institutions formed a consortium to collect supplemental data from principals, teachers and other staff in approximately half of the original HSB schools. Members of the consortium are as follows:

The National Center for Research in Vocational Education
The Ohio State Unviersity
Columlbus, OH 43210-1090

The Wisconsin Center for Education Research
The Unviersity of Wisconsin-Madison
Madison, WI 53706

The Institute for Research in Educational Finance and Governance
Stanford University
Stanford, CA 94305

The Center for Educational Policy and Management
The Unviersity of Oregon
Eugene, OR 97403

The Center for Social Organization of Schools
Johns Hopkins University
Baltimore, MD 21218

Members of the consortium shared expenses of a subcontract with NORC to collect the data, cooperated in constructing the survey questionnaires, and divided the work of data preparation. Data collection for the Supplemental Survey occurred in the Spring of 1984. It would have been preferable to have coordinated the timing of this data collection with that of the first follow-up HSB survey, in order to describe schools during the time period in which respondents were in attendance. The generally slow pace of change in institutions such as schools, however, suggests that the timing of the Supplemental Survey is not a serious enough problem to distort the major relationships.

Five questionnaires were prepared for the Supplemental HSB survey, one corresponding to each of five types of resondents: high school principal, teachers, vocational coordinator, head of guidance, and community service coordinator. Up to 30 teachers in each school responded to the teacher questionnaire; only one respondent per school completed each of the other questionnaires. (See Jones, Knight, and Ingels 1984 for more detail on the Supplemental Data collection).

This chapter makes use of the base-year and first follow-up questionnaire data on the older cohort (1980 seniors), base-year test scores, base year principal data from the main HSB survey, and information from the principal, teacher, guidance and vocational questionnaires associated with the Supplemental Survey. Information from the principal, teacher, guidance, and vocational questionnaires of the Supplemental Survey and the principal questionnaire of the main survey were merged with student data such that each student (up to 36) in a given school was assigned the same value on all variables taken from those questionnaires. Information from the teacher questionnaire was averaged for each school prior to the merge. Because less than half of the original HSB schools participated in the Supplemental Survey, the sample size of the merged data is just over 5,000.

A large working data file was created for the statistical analyses. This data file consisted of three components: (1) selected variables from the base-year older cohort data; (2) selected variables from the first follow-up older cohort data; and (3) selected variables from the principal questionnaire, the guidance questionnaire, the teacher questionnaire, and the vocational quidtionnaire of the Supplemental Survey. Separate data files were created containing the selected variables in each of these components. Each of these files contained data transformations needed for analysis. These three files were merged in such a manner that all cases in which the respondent did not participate in both the base-year and first follow-up surveys were excluded. The resulting sample size, excluding the supplemental data, is 10,126, which is

36 percent of the 28,240 members of the base-year older-cohort sample. With the supplemental data included, the sample size is reduced to a maximum of 5,041 (18 percent of original total).

## Analysis and Variables

The analysis of data proceeds in three parts. First, we examine the effects of (1) deportment in high school and (2) work attitudes on wage, hours, and unemployment. Three direct measures of conformity to school norms are used in this analysis--days absent from school but not sick in the first half of the senior year (truancy), days tardy to school in the first half of the senior year, and cutting class "now and then" (yes or no). These three variables are the same as those described in the previous chapter. The questions regarding coming to class unprepared that were used in that chapter were not asked of the senior cohort. A dummy variable indicating whether one received a high school diploma or GED also is included. This variable is similar to the dropout variable used in the previous chapter. In addition, three variables indicating having been sanctioned for some unknown infraction(s) are part of the analysis. These three variables are having "discipline problems in school," having been suspended from school, and having been "in serious trouble with the law." Labeling theory (Becker 1963) suggests that these types of experiences tend to encourage a pattern of persistent deviance.

There are two primary mechanisms by which deviance in high school might affect employment outcomes later. First, employers might select new hires for entry-level positions in part on the basis of applicants' behavior in high school. Since accurate information about such behavior may be difficult to ob-obtain, one might expect public sanctions to have stronger negative impacts of this type than the more direct measures of behavior. The second mechanism operates by indirection. It is based on the assumption that deviant behavior is persistent across time and setting. The hypothesis is that breach of high school norms will tend to foster violation of work norms on the job. Failure to conform on the job will tend to retard wage growth, reduce work hours, and increase the likelihood of unemployment. These mechanisms are shown graphically in figure 4.1 below.

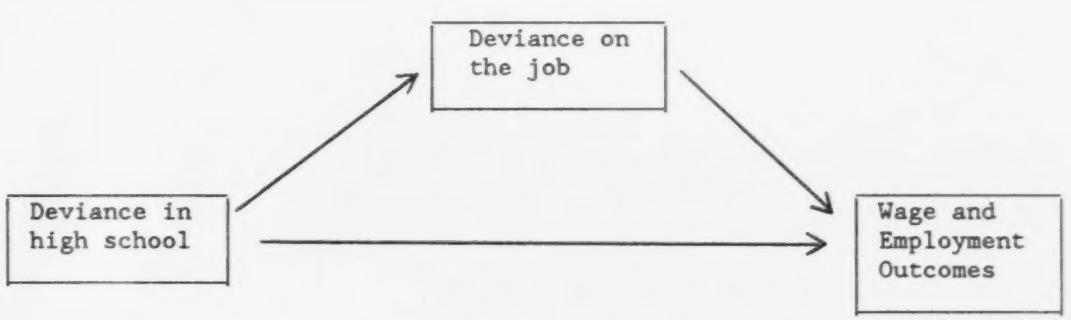


Figure 4.1 Model of the impact of deviance on work experiences

Since we have no measure of deviance on the job, the analyses conducted here will estimate the total effects of high school deviance (a + bc). Since it is much easier to learn about sanctions for deviance than about deviant behavior, it is likely that the direct effect of high school sanctions are greater than the direct effects of deviance. Hence, one might expect larger total effects for disciplinary problems in school, suspension, and trouble with the law than for truancy, tardiness, and class cutting. Further, behavior that leads to sanctions, particularly suspension or being in trouble with the law, may be perceived by employers to be relatively serious. For this reason also one is led *a priori* to expect stronger effects of the sanctioned behavior than of the direct measures of deviance. Failure to obtain a high school diploma is easy to observe; hence, its direct effect through employer selectivity also should be relatively strong.

Effects of attitudes such as work orientation, if they affect employment outcomes, presumably operate through their impact on behavior at work. The argument relating to effects of attitudes thus parallels that for deviance. The search for effects of attitudes is stimulated by the presumption that attitudes measured in high school are stable. They persist into the years following high school and affect behavior at work. But their effects should be broader than the effects of deviance. Attitudes should effect performance characteristics by influencing effort, initiative, and insight on the job, as well as by influencing deviance on the job.

The attitudinal measure with the most apparent relevance to behavior at work is a scale of work values, or work orientation, consisting of four items. Additionally, a scale of family values, a scale of community values, a scale of self-esteem, and a scale of locus of control are included in the set of attitudinal variables. The scales and the items that measure them are as follows:

Work values--

- o Importance of being successful in one's work
- o Importance of finding steady work
- o Importance of having lots of money
- o Importance of leisure (reflected)

Family values--

- o Importance of a happy family life
- o Importance of providing a "better life" for one's child
- o Importance of living close to one's parents
- o Importance of moving away from one's hometown (reflected)
- o Importance of having children

Community Values--

- o Importance of being a leader in one's community
- o Importance of giving one's children improved opportunities
- o Importance of seeking to correct irregularities

Self-esteem--

- o Taking a positive attitude toward oneself
- o Belief that one is "of equal worth" (to the next person)
- o Belief that one can do things as well as others
- o Satisfaction with oneself
- o Agreement that one is "no good" (reflected)
- o Agreement that one is not proud of oneself (reflected)

Locus of control--

- o Importance of good luck rather than hard work (reflected)
- o Belief that somebody gets in the way of success (reflected)
- o Belief that it doesn't pay to plan ahead (reflected)
- o Belief that people should accept conditions as they are (reflected)
- o Belief that what happens to one is one's own doing
- o Belief that one's plans usually work

These items were averaged to produce the indexes. Prior to calculating each average, items indicated as reflected were subtracted from a constant equal to 1 + the maximum scale value, thus changing the direction of the scale.

Little research has been conducted with these attitudinal measures, but Andrisani (1978) and Kang (1984) do find that internal locus of control contributes to desirable labor market outcomes. Kang, however, finds hours effects but no wage effects. Andrisani summarizes a theoretical argument suggesting that internal locus of control influences labor market experience because it influences initiative. Those with internal locus, it is argued, take more initiatives. A similar argument applies to self-esteem (Bachman and O'Malley 1977). Therefore, those with internal locus of control and high self-esteem should earn more and achieve higher prestige occupations. Family and community values may affect employment because they are associated with "responsible" behavior generally, and the tendancy to be responsible extends into the work place.

The second aspect of the analysis consists of examining the effects of school characteristics on employment experience of youth just after leaving high school. A total of ten variables were constructed by combining items from the four questionnaires in the Supplemental Survey. Responses of up to 30 teachers per school were averaged for each school before they were combined with items from the other three questionnaires. The ten variables and their definitions are given below.

- o Importance of good work habits--the average rank of the importance of good work habits given by the respondent to the vocational questionnaire, the principal questionnaire, and the

teacher questionnaire. The items in each of the three questionnaires appeared as goals to be ranked in order of importance. No work habits option was included on the guidance questionnaire.

- o Importance of schools providing specific job skills--the average rank given across all four Supplemental Survey questionnaires (except the Community Service Questionnaire) to the importance of teaching students specific job competencies/skills.

- o Importance of basic skills--the average rank given by respondents to the four questionnaires of the importance of basic skills in their education program.

- o Staff perceptions of student abilities--average across the four or questionnaires of respondent's assesssment of the capacity of his or her students to learn. These items are derived from the literature on effective schools, where it is argued that teacher belief in the ability of students to learn is critical (Edmonds 1979).

- o Release time given to vocational teachers to visit local employers on behalf of students. This variable is defined as the product of number of teachers given release time by the average number of hours per week.

- o Linkage to local employers--an average of the following 13 items: percentage of co-op coordinator's time spent conferring with employees, percentage of co-op coordinator's time spent in site visits, the number of teachers given release time to visit local employers on students' behalf, the average number of hours per week of such visits, whether employers influence the grades of students with supervised work experience, percentage of that grade determined by employers, number of students who participate in apprenticeships for which they receive high school credit, number of high school credits that can be applied to apprenticeship programs, number of career days per year, whether the vocational program has an advisory panel, average hours/week teachers report spent in contacting employers on students' behalf (teacher questionnaire), number of times per year a "typical" member of the guidance staff meets with employers (guidance questionnaire), and number of times per year a typical member of the guidance staff meets with community agencies such as the Chamber of Commerce (guidance questionnaire). Except as noted, these items came from the vocational questionnaire.

- o Placement activities of the school staff--average of five items: whether a placement service exists in the high school, percentage time staff in the placement service spent finding jobs for graduates of the school, rank order of the importance

of the school placement service in finding jobs for graduates of the school (out of a list including the individual student and other school staff), hours per week spent by teachers finding jobs for their students or former students (teacher questionnaire), and percentage of typical vocational teachers' time spent finding jobs for students about to graduate. Except as noted, these items came from the vocational questionnaire.

- o Primary guidance services utilization--an index of four components considered by guidance professionals to comprise the primary services offered by school guidance programs: student exposure to career information courses, student exposure to career units in other courses, student use of individual counseling services, and student use of group counseling services. All four variables were defined from the guidance questionnaire by taking the product of number of students exposed by a rough estimate of the extent of exposure.

- o Secondary guidance services--an index of 15 items considered by guidance professionals to be important modes of delivery of guidance services, but not as important as the primary services. Examples include career days, tours of colleges, tours of local employers, and assemblies on vocational topics.

The last part of the analysis consists of a brief examination of factors that contribute to percentage of time spent in school after leaving high school. The primary goal here is to examine the effects of goal orientations of schools (vocational vs. academic/basic skills) on the propensity of youth to go to college (or go to work). The same set of predictors used in the other analyses are used here. High school aspiration variables are not included because they presumably are strong intervening variables, and attention here is centered on the total effects of schools.

Three labor market outcomes are examined in the analyses: (1) hours worked per week, (2) wage, and (3) unemployment (number of months as percentage of total). In addition, the number of months spent in school as a ratio of months in a given time period is used as an outcome. Each of these variables is defined for two time periods from event-history data. The first time period is from the first September after the end of the cohort's senior year in high school through the following August (9/80-8/81). The second time period extends from 9/81 to the time of the first follow-up (2/82). The summer months after high school graduation are excluded in order to allow a short period for new graduates to get established either in school or in a job. Dividing the short period after 9/80 into two time periods is done to allow assessment of effects immediately after leaving school and compare those to effects in the later period. Presumably, school variables will have the strongest impact in the most immediate time period.

Since the Supplemental Survey included only about half of the original HSB schools, the sample size when variables from the Supplemental Survey are included is cut approximately in half. To conserve cases, analyses of the effects of school deviance and attitudes are conducted without the variables from the Supplemental Survey. All the analyses include controls for race, ethnicity, and gender (where separate analyses for males and females are not

reported), an index of parental status (education, occupation, income); residence in a rural/urban location (two dummies, suburban omitted), age, whether respondent is on active duty in the military, homework, part-time work during high school, math and verbal test scores, grade point average (self-report), grades in business, and grades in trade and industry classes. Initially, analyses were carried out with an extended set of controls, including eight dummy variables for census regions, separate parental status measures, and exposure to vocational and academic coursework. Since most of these had negligible coefficients, they were deleted to conserve degrees of freedom.

## Results

Since the labor market faced by college students is similar to that faced by nonstudents just out of high school, the two groups are combined for the initial regressions. Males and females also are combined for the initial analyses, with a sex dummy variable included on the right. The results are shown in table 4.1. The effects of seven aspects of school deviance and five attitudinal measures are estimated. The results are remarkable for the absence of consistent effects of the school behaviors. Only one coefficient out of 42 estimated is statistically significant--the effect of days tardy to school on wage in period 1 (9/80-8/81). The sign of this coefficient, however, is positive, implying that tardiness in high school raises one's wages after leaving high school. According to the estimate, each day tardy (in the first half of the senior year) adds four cents an hour to the wage later. Even disregarding statistical significance, no clear pattern of effects emerges from inspecting the signs of the coefficients. Most of the coefficients are so small as to be entirely trivial. If there is any generalization in these data, it is that misbehavior in school has a very slight tendency to improve one's labor market experience in the initial two time periods after leaving school. This generalization is weak, however, since the signs of the coefficients exhibit an erratic pattern, and all the coefficients are small. In any case, the results contradict the beliefs of employers that good behavior is crucial to success of entry-level workers.

The estimated effects of the attitudinal measures are somewhat stronger than the effects of school behaviors, though the effects of the attitudes are not exceptionally strong either. The most curious pattern in these coefficients is that the index of work values does not have a statistically significant effect on any of the six outcomes, and all those coefficients are trivially small in magnitude. In contrast, emphasis on the importance of family (family values), is associated with favorable labor market experience--more hours, higher wage, and less unemployment. The signs of the coefficients on family values are consistent in both time periods, and all three coefficients in period 2 are significant. Only the coefficient on hours is statistically significant in period 1, however. The signs of the coefficients associated with locus of control are, without exception, consistent with the view that internal locus of control improves early employment experience. Only the coefficients on period 1 wage and period 2 unemployment are significant, however. It is indeed interesting that high self-esteem is associated with poor employment experience in the first two periods after leaving high school. Again, not all the coefficients are statistically significant, but the pattern is unbroken. High self-esteem decreases hours and wage and increases the

TABLE 4.1

EFFECTS OF SCHOOL DEPORTMENT AND ATTITUDES
ON EMPLOYMENT OUTCOMES

| | Dependent Variables | | | | | |
|---|---|---|---|---|---|---|
| | Period 1 | | | Period 2 | | |
| Independent Variables | Hours | Wage | Unemployment | Hours | Wage | Unemployment |
| **Deviance-related measure** | | | | | | |
| Truancy | -.0101<br>(-.0028) | .0045<br>(.0123) | .0172<br>(.0267) | .0495<br>(.0136) | .0128<br>(.0292) | .0032<br>(.0110) |
| Tardiness | .0669<br>(.0208) | .0130*<br>(.0400) | .0021<br>(.0037) | -.0429<br>(-.0134) | .0056<br>(.0146) | .0039<br>(.0152) |
| Cut classes | .4105<br>(.0142) | .0174<br>(.0059) | .0181<br>(.0035) | .7774<br>(.0267) | -.0026<br>(-.0007) | .0046<br>(.0020) |
| High school diploma | .9063<br>(.0057) | -.1676<br>(-.0104) | .2469<br>(.0087) | 4.168<br>(.0259) | .3418<br>(.0176) | -.4364<br>(-.0338) |
| Discipline problems in school | .0390<br>(.0009) | -.0440<br>(-.0100) | (-.0354)<br>(-.0046) | .3434<br>(.0079) | -.0264<br>(-.0051) | -.0700<br>(-.0200) |
| Suspended from school | .2671<br>(.0058) | .0362<br>(.0078) | -.0162<br>(-.0020) | -.0594<br>(-.0013) | -.0440<br>(-.0080) | .0792<br>(.0215) |
| In serious trouble with the law | -1.409<br>(-.0170) | .1778<br>(.0212) | .0242<br>(.0016) | .3713<br>(.0046) | .2664<br>(.0275) | .1466<br>(.0227) |
| **Attitudes** | | | | | | |
| Self esteem | -.2224<br>(-.0115) | -.0526<br>(-.0269) | .0998<br>(.0289) | -.6054*<br>(-.0310) | -.0815*<br>(-.0347) | .0410<br>(.0262) |
| Locus of control | .3179<br>(.0146) | .0679*<br>(.0307) | -.1019<br>(-.0261) | .2300<br>(.0105) | .0377<br>(.0144) | -.0848**<br>(-.0486) |
| Work values | .3933<br>(.0191) | .0137<br>(.0066) | -.0363<br>(-.0099) | .0947<br>(.0045) | .0111<br>(.0044) | -.0188<br>(-.0112) |
| Family values | .9792**<br>(.0430) | .0148<br>(.0064) | -.1043<br>(-.0256) | .8013*<br>(.0350) | .0972*<br>(.0353) | -.0704*<br>(-.0383) |
| Community values | -.3547<br>(-.0173) | -.0248<br>(-.0120) | .1705**<br>(.0465) | -.4347<br>(-.0209) | -.0801*<br>(-.0321) | .0001<br>(.0001) |
| Corrected R-square | .2226 | .0563 | .0429 | .2008 | .0689 | .0304 |

NOTES: Standardized coefficients in parentheses. Probabilities are for two-tailed tests:
*** $p \leq .001$, ** $p \leq .01$ , * $p \leq .05$

BEST COPY AVAILABLE

chance of unemployment. The same pattern occurs for community values, but the magnitudes of the coefficients is smaller.

By way of brief synopsis, table 4.1 implies that deviant behavior in high school has practically no influence on entry-level job outcomes. Even presence or absence of a high school diploma has little effect for those who remained in school into grade 12. Neither do work values have any substantial effect. The results do imply that if one desires success in entry-level jobs one should develop low self-esteem, have strong commitment to family, have a weak commitment to community, and believe that one controls one's own destiny. Though the analyses supporting this generalization are not strong, there are no exceptions in the patterns.

Since time is a limited resource, attending a postsecondary school (including colleges and universities) should tend to reduce commitment to the labor market and the hours per week that one works. Moreover, the nature of the markets faced by nonstudents who are full-time workers may be different than that faced by students, although informal observation does not suggest strong differences. Because of these considerations, the regressions reported in table 4.1 were repeated for full-time students and for those who were not full time students. The results are reported in table 4.2. No dramatic differences between the estimates in table 4.1 and those in table 4.2 are evident, but some discrepancies are noteworthy. First, despite the reduced sample size, some of the effect estimates associated with deviance while in high school are now statistically significant. The strongest effect is on having been in trouble with the law. It reduces hours worked per week in period 1 for college students by nearly five hours per week. Anomalously, however, it raises hours in period 2, and the coefficient is nearly significant ($p \leq .0990$). According to the estimates, truancy in high school raises the wage in period 2 for postsecondary students, and tardiness does so in period 1. For nonstudents, truancy in high school raises the chance of unemployment in period 1 but has essentially no effect in period 2. Tardiness raises the chance of unemployment in period 2 but has virtually no effect in period 1. Cutting classes increases hours in period 2 and exhibits a similar tendency in period 1, though the latter coefficient is not significant. Having a high school diploma reduces unemployment in period 2, but not in period 1 (the sign is positive in period 1). Suspension from high school increases unemployment in period 2, but not in period 1. For nonstudents, there does appear to be a weak tendency for effects of "misbehavior" in high school on employment variables to increase from period 1 to period 2. It remains unclear as to whether high school misbehavior improves or is detrimental to post high school employment outcomes. In a number of instances, the signs of coefficients are consistent with the view that deviance in high school improves employment outcomes. Cutting classes, for nonstudents, for example, increases hours in period 2, and the effect is significant and relatively strong.

The patterns of coefficients associated with the attitude variables observed in table 4.1 is not changed much in table 4.2, but it is not quite as clear cut, perhaps due to reduced sampling stability. Self-esteem still has a slight negative impact on hours and wage and a positive effect on unemployment. This pattern is clearer among students than among nonstudents. Effects of locus of control remain for nonstudents, but are not so clear for students. Similarly, the effects of family values are stronger for nonstudents. Work

BEST COPY AVAILABLE

TABLE 4.2

EFFECTS OF SCHOOL DEPORTMENT AND ATTITUDES ON EMPLOYMENT OUTCOMES BY STUDENT STATUS

| | Not a Full-Time Student Dependent Variables | | | | | |
|---|---|---|---|---|---|---|
| | Period 1 | | | Period 2 | | |
| Independent Variables | Hours | Wage | Unemployment | Hours | Wage | Unemployment |
| **Deviance-related measure** | | | | | | |
| Truancy | -.0892<br>(-.0280) | .0026<br>(.0071) | .0326*<br>(.0616) | -.0244<br>(-.0081) | .0088<br>(.0194) | -.0012<br>(-.0050) |
| Tardiness | .0823<br>(.0266) | .0046<br>(.0131) | .0002<br>(.0004) | -.0205<br>(-.0072) | -.0073<br>(-.0168) | .0096*<br>(.0440) |
| Cut classes | .5667<br>(.0200) | .0350<br>(.0109) | -.0151<br>(-.0032) | 1.4496*<br>(.0546) | .0796<br>(.0198) | -.0170<br>(-.0081) |
| High school diploma | .6515<br>(.0060) | -.2026<br>(-.0163) | .2334<br>(.0129) | 4.3577<br>(.0418) | .3125<br>(.0198) | -.5060*<br>(-.0613) |
| Discipline problems in school | .0810<br>(.0021) | .0311<br>(.0071) | -.0624<br>(-.0097) | -.2024<br>(-.0056) | .1037<br>(.0191) | -.0067<br>(-.0024) |
| Suspended from school | .9504<br>(.0235) | -.0575<br>(-.0125) | .0510<br>(.0076) | .2192<br>(.0058) | -.1658<br>(-.0289) | .1401*<br>(.0467) |
| In serious trouble with the law | .5692<br>(.0082) | .1968<br>(.0250) | .3026<br>(.0262) | -1.5033<br>(-.0235) | .2804<br>(.0299) | .1830<br>(.0362) |
| **Attitudes** | | | | | | |
| Self-esteem | -.3366<br>(-.0177) | -.0618<br>(-.0285) | -.0028<br>(-.0009) | -.8980*<br>(-.0507) | -.1035<br>(-.0386) | .0029<br>(.0020) |
| Locus of control | 1.2466<br>(.0600)** | .1521**<br>(.0644) | -.0232<br>(-.0067) | 1.0148*<br>(.0528) | .1414<br>(.0486) | -.0818*<br>(-.0538) |
| Work values | .3075<br>(.0159) | .0154<br>(.0070) | -.0722<br>(-.0224) | -.0136<br>(-.0007) | .0251<br>(.0090) | -.0330<br>(-.0225) |
| Family values | 1.3160**<br>(.0582) | .0584<br>(.0227) | -.1740<br>(-.0463) | .7716<br>(.0374) | .1281<br>(.0410) | -.1078**<br>(-.0661) |
| Community values | -.2057<br>(-.0098) | -.0490<br>(-.0206) | .0789<br>(.0226) | -.0256<br>(-.0013) | -.1207<br>(-.0408) | .0055<br>(.0036) |
| Corrected R-square | .1577 | .0666 | .0523 | .1419 | .0640 | .0433 |

BEST COPY AVAILABLE

TABLE 4.2—(Continued)

| Independent Variables | Full-Time Student Dependent Variables | | | | | |
|---|---|---|---|---|---|---|
| | Period 1 | | | Period 2 | | |
| | Hours | Wage | Unemployment | Hours | Wage | Unemployment |
| Deviance-related measure | | | | | | |
| Truancy | .0754<br>(.0213) | .0074<br>(.0200) | .0008<br>(.0010) | .0971<br>(.0251) | .0186*<br>(.0448) | .0096<br>(.0274) |
| Tardiness | .0438<br>(.0152) | .0165**<br>(.0544) | .0084<br>(.0137) | -.0405<br>(-.0132) | .0140<br>(.0423) | -.0005<br>(-.0017) |
| Cut classes | .0486<br>(.0019) | -.0082<br>(-.0030) | .0590<br>(.0107) | -.1441<br>(-.0052) | -.0819<br>(-.0274) | .0420<br>(.0167) |
| Discipline problems in school | .1174<br>(.0028) | -.1216<br>(-.0277) | .0516<br>(.0058) | 1.2981<br>(.0283) | -.1183<br>(-.0382) | -.1516<br>(-.0366) |
| Suspended from school | -.1851<br>(-.0041) | .1229<br>(.0261) | -.0724<br>(-.0076) | -.7168<br>(-.0148) | .0924<br>(.0177) | .0167<br>(.0038) |
| In serious trouble with the law | -4.2618***<br>(-.0501) | .1424<br>(.0159) | -.3177<br>(-.0176) | 2.9930<br>(.0339) | .2543<br>(.0267) | .0847<br>(.0106) |
| Attitudes | | | | | | |
| Self-esteem | -.2255<br>(-.0132) | -.0454<br>(-.0252) | .1621*<br>(.0445) | -.4375<br>(-.0235) | -.0700<br>(-.0349) | .0747*<br>(.0443) |
| Locus of control | -.1796<br>(-.0087) | .0123<br>(.0057) | -.1931*<br>(-.0440) | -.3341<br>(-.0151) | -.0507<br>(-.0213) | -.0939*<br>(.0469) |
| Work values | .4598<br>(.0244) | .0105<br>(.0053) | -.0188<br>(-.0042) | .1551<br>(.0078) | -.0193<br>(-.0087) | -.0153<br>(-.0082) |
| Family values | .5970<br>(.0298) | -.0147<br>(-.0070) | -.0733<br>(-.0172) | .5940<br>(.0271) | .0754<br>(.0320) | -.0508<br>(-.0256) |
| Community values | -.1407<br>(-.0079) | .0039<br>(.0021) | .2039**<br>(.0541) | -.4430<br>(-.0231) | -.0318<br>(-.0154) | -.0079<br>(-.0045) |
| Corrected R-square | .1133 | .0392 | .0444 | .0996 | .0542 | .0259 |

NOTES: Standardized coefficients in parentheses. Probabilities are for two-tailed tests:
*** $p \leq .001$, ** $p \leq .01$, * $p \leq .05$

BEST COPY AVAILABLE

values still do not have any noteworthy impact. The effects of community values remain weak, except on unemployment of students in period 1.

Women undoubtedly face a different labor market than men. Consistent tendencies to occupational sex segregation are reported in the literature (e.g., Treiman and Hartman 1981: England 1982). Consequently, the above analyses also were conducted separately for males and females. Effect estimates by gender are reported in table 4.3. Again, having examined the combined estimates in table 4.1, there are no major suprises in these data. Differences between the sexes do, however, emerge. First, there are no significant effects of deviance for males, but some strong effects are present for females. The most noteworthy case in point is the strong effect of high school graduation on hours in period 2 (but not period 1). Failure to graduate reduces the work time of females in period 2 by 9.5 hours per week. Graduation also helps to reduce unemployment of females in period 2--by 4.2 percent. Truancy increases unemployment in period 1, but not period 2, for females. Curiously, truancy is estimated to improve the wages in period 2 for females.

The patterns of effects of attitudes observed in table 4.1 also are evident in table 4.3, but the clarity is reduced somewhat, presumably due to the reduced sample size. The primary difference between males and females regarding effects of attitudes is that family values are more important for females than for males. For the first time, a significant effect of work values is observed--positive work values reduce unemployment of males in period 2.

Table 4.4 displays estimates of the effects of school services and staff beliefs on employment outcomes. Separate regressions were calculated by sex, by student status, and simultaneously by sex and student status. The results were compared to the aggregate estimates. No qualitatively important differences were observed, so the tabulation is for all four groups (male nonstudents, female nonstudents, male students, and female students) combined. Most of the coefficients in table 4.4 are not statistically significant, but there are nevertheless some encouraging findings. First, job information at school raises hours worked per week, and, surprisingly, this effect nearly doubles from period 1 to period 2. Utilization of secondary guidance services (e.g., tours of employers, assemblies) improves the wage in period 1 and period 2, though the coefficient in period 2 is not quite significant. Linkages increase hours but decrease wage in period 1. Linkage also decreases unemployment in both periods. None of these coefficients is significant at the conventional .05 level, but the coefficients are not negligible in magnitude, and probabilities of type I error approach .05 in some instances. Release time given to teachers to contact local employers also increases hours in both time periods, though neither coefficient is quite statistically significant. Emphasizing the teaching goal of inculcating students with good work habits improves the wage in both periods and reduces unemployment in period 1. It increases unemployment in period 2, however, though the coefficient is not significant. Staff emphasis on the importance of job skills and basic skills increases unemployment. These coefficients may be due to feedback effects of unemployment on staff attitudes. Teachers and staff located in areas of high unemployment may be stimulated to believe that both basic and job skills are important in order to give their students an edge in a very competitive job market. Being located in such a labor market probably also increases the unemployment of individuals.

TABLE 4.3

EFFECTS OF SCHOOL DEPORTMENT AND ATTITUDES ON EMPLOYMENT OUTCOMES BY GENDER

| | Males | | | | | |
|---|---|---|---|---|---|---|
| | Dependent Variables | | | | | |
| | Period 1 | | | Period 2 | | |
| Independent Variables | Hours | Wage | Unemployment | Hours | Wage | Unemployment |
| Deviance-related measure | | | | | | |
| Truancy | -.0275<br>(-.0077) | .0011<br>(.0031) | -.0038<br>(-.0070) | -.0064<br>(-.0018) | .0054<br>(.0122) | .0002<br>(.0008) |
| Tardiness | .0486<br>(.0154) | .0119<br>(.0363) | .0165<br>(.0340) | -.0338<br>(-.0111) | .0145<br>(.0375) | .0048<br>(.0211) |
| Cut classes | .6666<br>(.0221) | .0940<br>(.0299) | -.0541<br>(-.0116) | .2953<br>(.0099) | .0813<br>(.0215) | -.0075<br>(-.0033) |
| High school diploma | 1.4324<br>(.0095) | -.4482<br>(-.0286) | .2394<br>(.0103) | 1.0027<br>(.0069) | .3660<br>(.0198) | -.2900<br>(-.0264) |
| Discipline problems in school | -.2972<br>(-.0071) | -.1225<br>(-.0284) | -.0048<br>(-.0007) | -.3272<br>(-.0080) | -.0998<br>(-.0193) | -.0464<br>(-.0151) |
| Suspended from school | .2817<br>(.0066) | .0532<br>(.0119) | -.0931<br>(-.0141) | .7913<br>(.0187) | -.1078<br>(-.0201) | .1424<br>(.0447) |
| In serious trouble with the law | -1.8552<br>(-.0283) | .1610<br>(.0236) | .2607<br>(.0258) | .7229<br>(.0116) | .2763<br>(.0350) | .1528<br>(.0325) |
| Attitudes | | | | | | |
| Self-esteem | -.0650<br>(-.0031) | -.0848<br>(-.0385) | .1073<br>(.0329) | -.6293<br>(-.0294) | -.0891<br>(-.0328) | .0018<br>(.0383) |
| Locus of control | .1914<br>(.0083) | .0418<br>(.0175) | -.1082<br>(-.0305) | .4353<br>(.0196) | .0905<br>(.0321) | -.1023*<br>(-.0610) |
| Work values | .4379<br>(.0189) | .0338<br>(.0140) | -.1401<br>(-.0392) | .5159<br>(.0223) | .0299<br>(.0102) | -.1003*<br>(-.0575) |
| Family values | .8684<br>(.0362) | -.0296<br>(-.0118) | -.0597<br>(.0161) | .9516<br>(.0397) | .0566<br>(.0188) | -.0346<br>(-.0191) |
| Community values | -.5991<br>(-.0291) | -.0381<br>(-.0168) | .1862*<br>(.0586) | -.7438<br>(-.0361) | -.0975<br>(-.0374) | -.0076<br>(-.0049) |
| Corrected R-square | .2395 | .0407 | .0290 | .2140 | .0666 | .0250 |



BEST COPY AVAILABLE

TABLE 4.3--(Continued)

| | Females | | | | | |
|---|---|---|---|---|---|---|
| | Dependent Variables | | | | | |
| | Period 1 | | | Period 2 | | |
| Independent Variables | Hours | Wage | Unemployment | Hours | Wage | Unemployment |
| Deviance-related measure | | | | | | |
| Truancy | .0119<br>(.0034) | .0094<br>(.0271) | .0418**<br>(.0575) | .1044<br>(.0285) | .0220*<br>(.0526) | .0065<br>(.0205) |
| Tardiness | .0857<br>(.0271) | .0127<br>(.0410) | -.0138<br>(-.0212) | -.0369<br>(-.0114) | -.0057<br>(-.0156) | .0027<br>(.0097) |
| Cut classes | .1685<br>(.0062) | -.0431<br>(-.0162) | .0936<br>(.0168) | 1.1459<br>(.0414) | -.0678<br>(-.0214) | .0162<br>(.0067) |
| High school diploma | .7491<br>(.0046) | .2103<br>(.0131) | .1939<br>(.0058) | 9.510**<br>(.0547) | .3408<br>(.0172) | -.6363*<br>(-.0420) |
| Discipline problems in school | .2956<br>(.0067) | .0209<br>(.0048) | -.0677<br>(-.0075) | 1.0485<br>(.0232) | .0402<br>(.0078) | -.0836<br>(-.0212) |
| Suspended from school | .2276<br>(.0047) | .0218<br>(.0046) | .1286<br>(.0129) | -1.0369<br>(-.0210) | .0519<br>(.0092) | -.0090<br>(-.0021) |
| In serious trouble with the law | -.9989<br>(-.0078) | .0111<br>(.0009) | -.7406<br>(-.0280) | -1.3709<br>(-.0107) | -.0981<br>(-.0067) | .1355<br>(.0121) |
| Attitudes | | | | | | |
| Self-esteem | -.3320<br>(-.0192) | -.0331<br>(-.0195) | .0964<br>(.0270) | -.5661<br>(-.0323) | -.0748<br>(-.0374) | .0298<br>(.0195) |
| Locus of control | .3597<br>(.0178) | .0882*<br>(.0445) | -.0655<br>(-.0158) | -.0167<br>(-.0008) | .0004<br>(.0002) | -.0614<br>(-.0340) |
| Work values | .2315<br>(.0127) | -.0230<br>(-.0128) | .0344<br>(.0092) | -.2481<br>(-.0130) | -.0432<br>(-.0198) | .0320<br>(.0193) |
| Family values | 1.0489**<br>(.0498) | .0478<br>(.0231) | -.1086<br>(-.0251) | .5772<br>(.0270) | .1349**<br>(.0554) | -.0856*<br>(-.0461) |
| Community values | -.1157<br>(-.0059) | .0049<br>(.0025) | .1571<br>(.0387) | -.1349<br>(-.0067) | -.0354<br>(-.0154) | .0081<br>(.0046) |
| Corrected R-squared | .1551 | .0167 | .0420 | .1249 | .0261 | .0298 |

NOTES: Standardized coefficients in parentheses. Probabilities are for two-tailed tests:
*** $p \leq .001$, ** $p \leq .01$, * $p \leq .05$

BEST COPY AVAILABLE

TABLE 4.4

EFFECTS OF SCHOOL VARIABLES ON EMPLOYMENT OUTCOMES

| | Dependent Variables | | | | | |
|---|---|---|---|---|---|---|
| | Period 1 | | | Period 2 | | |
| Independent Variables | Hours | Wage | Unemployment | Hours | Wage | Unemployment |
| Importance of good work habits | .6237<br>(.0333) | .1223*<br>(.0647) | -.1658<br>(-.0461) | .2422<br>(.0128) | .0841<br>(.0377) | .0389<br>(.0250) |
| Importance of job skills | -.2462<br>(-.0120) | .0451<br>(.0217) | .2286*<br>(.0579) | -.1459<br>(-.0070) | .0525<br>(.0213) | .0558<br>(.0326) |
| Importance of basic skills | -.1684<br>(-.0085) | .0078<br>(.0039) | .2524*<br>(.0663) | .1230<br>(.0061) | -.0654<br>(-.0274) | .0662<br>(.0399) |
| Ability rating of students by staff | -.5324<br>(-.0162) | -.0377<br>(-.0114) | .1043<br>(.0166) | -1.0061<br>(-.0299) | -.0363<br>(-.0091) | .0640<br>(.0231) |
| Release time | .0062<br>(.0452) | -.0002<br>(-.0165) | -.0007<br>(-.0257) | .0033<br>(.0249) | -.0002<br>(-.0157) | .0001<br>(.0104) |
| "Linkage" | 1.3470<br>(.0388) | -.1617<br>(-.0482) | -.2734<br>(-.0410) | .0072<br>(.0002) | -.0454<br>(-.0110) | -.0574<br>(-.0200) |
| Placement service | -.4335<br>(-.0169) | -.0802<br>(-.0309) | .1122<br>(.0228) | -.2715<br>(-.0104) | -.1192<br>(-.0387) | -.0006<br>(-.0003) |
| Job information | 2.5491*<br>(.0478) | -.2301<br>(-.0428) | -.3770<br>(-.0368) | 4.3464**<br>(.0799) | -.0154<br>(-.0024) | -.1756<br>(-.0394) |
| Primary guidance service | -.0015<br>(-.0223) | -.0001<br>(-.0162) | -.0003<br>(-.0248) | -.0012<br>(-.0180) | .0001<br>(.0175) | .00005<br>(.0083) |
| Secondary guidance service | -.0058<br>(-.0367) | .0009*<br>(.0591) | .0008<br>(.0282) | -.0037<br>(-.0225) | .0007<br>(.0386) | -.0003<br>(-.0191) |
| Corrected R-square | .2405 | .0718 | .0723 | .2303 | .0758 | .0398 |

NOTES: Standardized coefficients in parentheses. Probabilities are for two-tailed tests:
*** $p \leq .001$, ** $p \leq .01$, * $p \leq .05$

BEST COPY AVAILABLE

Overall, while some encouraging findings are evident in table 4.4, the data do not yeld an unambiguous endorsement of the effectiveness of a variety of auxiliary services in assisting youth in making the transition from high school to entry-level jobs. The effects of the primary guidance services are particularly disappointing. They are uniformly small, and the signs of the coefficients vary in erratic fashion.

Effects of deviance, attitudes, and the school variables on school attendance in period 1 and period 2 are shown in table 4.5. It is indeed interesting that the deviance-related variables exercise fairly consistent negative impact on attendance at postsecondary school. Truancy and cutting classes both have fairly strong negative impacts with statistically significant coefficients. Most of the rest of the coefficients associated with the deviance measures are negative, and the two that are not are trivially small in magnitude ($\beta$= .035 for in trouble with the law, period 1; $\beta$ = .0181 for tardiness, period 2). Attitudes exercise strong effects on school attendance. Internal locus of control has particularly strong positive effects; so do community values. Curiously, work values also have a positive effect, counter to *a priori* expectation, but family values tend to have negative effects. Self esteem has no appreciable effects. There certainly is no evidence here that services and staff attitudes associated with strong school emphasis on vocational preparation discourage youth from attending postsecondary school.

## Summary and Conclusions

This chapter examines the effects of deviance in high school, attitudes, and school variables on employment experience in the immediate time periods after leaving high school. The deviance variables include truancy, tardiness, cutting class, not receiving a high school diploma, discipline problems in school, suspension from school, and having been in "serious trouble with the law." The attitudinal variables consist of work values, family values, community values, self-esteem, and locus of control, all operationalized such that *a priori* expectation was for favorable impact on employment--on the grounds that adherence to values defined as socially desirable implies a tendency to conform in ways that promote desired labor market outcomes. The school variables are of two types: (1) staff attitudes regarding the goals for the school and student capacities, and (2) services related to employment. The staff attitudes include ranking of the importance of developing basic skills, job skills, and good work habits. This group of variables also includes one item indicating staff belief in the capacity of students to learn. Variables describing school services include placement services, job information, linkage, teacher release time to visit local employers, and utilization of guidance services.

The findings indicate that deviance during high school has little or no effects on employment experience just after leaving high school. Effect estimates generally are close to zero, but those that are not are nearly as likely to imply that high school deviance generates favorable labor market experience that as it generates unfavorable experience. Attitudes have stronger effects than deviance. This result was not anticipated. The two types of observation together imply (1) that deviance may be situation specific, and (2) attitudes

BEST COPY AVAILABLE

TABLE 4.5

EFFECTS OF DEPORTMENT, ATTITUDES, AND SCHOOL VARIABLES ON TIME IN SCHOOL

| Independent Variables | Dependent Variables: Percentage of Time in School/Period 1 | | Percentage of Time in School/Period 2 | |
|---|---|---|---|---|
| **Deviance-related variables** | | | | |
| Truancy | -.0058 | (-.0539)** | -.0061 | (-.0550)** |
| Tardiness | -.0003 | (-.0029) | .0019 | (.0181) |
| Cut classes | -.0478 | (-.0514)** | -.0458 | (-.0481)** |
| Discipline problems in school | -.0449 | (-.0325) | -.0364 | (-.0257) |
| Suspended from school | -.0531 | (-.0351)* | -.0481 | (-.0310) |
| In serious trouble with the law | .0092 | (.0035) | -.0236 | (-.0089) |
| **Attitudes** | | | | |
| Self esteem | .0002 | (.0002) | -.0032 | (-.0049) |
| Locus of control | .0440 | (.0636)*** | .0411 | (.0580)*** |
| Work values | .0378 | (.0549)*** | .0429 | (.0609)*** |
| Family values | -.0139 | (-.0190) | -.0301 | (-.0403)* |
| Community values | .0499 | (.0754)*** | .0509 | (.0751)*** |
| **School variables** | | | | |
| Importance of good work habits | -.0160 | (-.0269) | -.0148 | (-.0244) |
| Importance of job skills | .0111 | (.0163) | -.0032 | (-.0047) |
| Importance of basic skills | .0010 | (.0015) | -.0014 | (-.0020) |
| Ability rating of student by staff | .0072 | (.0100) | .0040 | (.0054) |
| Release time | -.0001 | (-.0188) | -.0001 | (-.0265) |
| "Linkage" | -.0071 | (-.0065) | .0145 | (.0129) |
| Placement services | .0159 | (.0181) | .0246 | (.0273) |
| Job information | .0200 | (.0111) | .0041 | (.0022) |
| Primary guidance service | -.00004 | (-.0176) | -.00004 | (-.0204) |
| Secondary guidance service | .0001 | (.0279) | .0001 | (.0144) |
| Corrected R-square | .2974 | | .2906 | |

NOTES: Standardized coefficients in parentheses. Probabilities are for two-tailed tests: *** $p \leq .001$, ** $p \leq .01$, * $p \leq .05$

BEST COPY AVAILABLE

tend to be enduring by comparison. These generalizations derive from a number of untested assumptions, however. The first is based on the premise that deviance at work does, in fact, lead to unfavorable work experience. Consequently, if high school deviance carries over into the work setting, one should observe that those who were deviant in high school work fewer hours, earn a lower wage, and are more likely to be unemployed than those who conform to high school norms. The second derives from the assumption that attitudes at work affect work behavior which, in turn, affects labor market success.

The pattern of the effects of the attitudes is curious, however. Internal locus of control and strong family values lead to favorable labor market outcomes. The effects of family values are stronger for females. Positive self-esteem, however, hinders labor market success, especially for students in postsecondary schools. Work values have almost no effects! The one exception here is that positive work values of males reduce the chance of unemployment. Community values generally have little effect, but there is a tendency for strong sense of community to inhibit success in entry-level jobs. None of the effects of attitudes are strong, however, and many coefficients are not statistically significant.

The lack of effects of school deviance, the small effects of attitudes, and the lack of consistent signs on the coefficients associated with deviance and with attitudes all suggest that employer emphasis on good attitude and hard work is misplaced. This conclusion probably is not justified however. First, the low effects of school deviance probably result in part from the inability of employers to use behavioral records as screening devices. It does not mean that deviance on the job has no effect. Secondly, it seems apparent that employers are not able to determine reliably in advance of hiring what attitudes job applicants hold. Therefore, employers cannot screen on attitudes either.

Even if it were possible to screen on attitudes, one would need substantially more evidence than is contained in this paper before deciding to pick individuals for jobs with internal locus of control, low self esteem, and high family values, and disregarding applicants' work values.

The investigation of the effects of school variables also did not uncover any exceptionally strong effects, but some encouraging results were observed. In particular, availability of job information in the high school, linkage between the school and local employers, and release time given to teachers to contact local employers show some tendencies to foster favorable employment experiences for youth who attended schools offering these services. These effects are not strong, however, and exhibit a somewhat erratic pattern of sign changes across outcome measures. The strongest effects are for job information. Counseling services do not show a consistent pattern of helping youth in the transition from school to work.

The implications of these results for school policy regarding employability development of students are difficult to assess. Strong emphasis on good deportment and "responsible" attitudes is not supported by the analyses here, though it is difficult to agree on broader grounds that such emphasis is ill advised. The results do imply that policies designed to provide concrete services such as job information may be helpful, but the statistical results are too weak to engender confidence in this type of policy.

REFERENCES


Andrisani, Paul J. "Internal-External Attitudes, Personal Initiative, and the Labor Market Experience of Black and White Men." Journal of Human Resources 12, no. 3 (1978): 308-325.

Bachman, Jerald G., and O'Malley, Patrick M. "Self-Esteem in Young Men: A Longitudinal Analysis of the Impact of Educational and Occupational Attainment." Journal of Personality and Social Psychology 35 (1977): 365-380.

Becker, Howard S. Outsiders. New York: Free Press, 1963.

Bowles, Samuel, and Gintis, Herbert. Schooling in Capitalist America. New York: Basic Books, 1976.

Campbell, Paul B.; Gardner, John A.; and Seitz, Patricia. Post Secondary Experience of Students with Varying Participation in Secondary Vocation Education. Columbus: The National Center for Research in Vocational Education, The Ohio State University, 1982.

D'Amico, Ronald, and Baker, Paula. "The Nature and Consequences of High School Employment." In Pathways to the Future: Volume 4, pp. 1-48. Columbus: Center for Human Resource Research, The Ohio State University, 1984.

DiPrete, Thomas A. Discipline, Order and Student Behavior in American High Schools. Prepared for the National Center for Education Statistics under contract DE-3---78-0208 with the U.S. Department of Education. Washington, DC: National Opinion Research Center, November 1981.

Doeringer, Peter, and Piore, Michael J. Internal Labor Markets and Manpower Analysis. Lexington, MA: D.C. Heath, 1971.

Edmonds, Ronald E. "Some Schools Work and More Can." Social Policy 9 (March - April 1979): 28-32.

Ellwood, David T. "Teenage Unemployment: Permanent Scars or Temporary Blemishes?" In The Youth Labor Market Problem: Its Nature, Causes, and Consequences, edited by Richard B. Freeman and David A. Wise. Chicago: University of Chicago Press, 1981.

England, Paula. "Assessing Trends in Occupational Sex Segregation, 1900-1976." In Sociological Perspectives on Labor Markets, edited by Ivar Berg, pp. 273-292. New York: Academic Press, 1982.

Freeman, Richard B., and Wise, David A. eds. The Youth Labor Market Problem: Its Nature, Causes, and Consequences. Chicago: The University of Chicago Press, 1982.

Grasso, John T., and Shea, John R. Vocational Education and Training: Impact on Youth. Berkeley, CA: Carnegie Council on Policy Studies in Higher Education, 1979.

Hollenbeck, Kevin, and Smith, Bruce. Selecting Young Workers: The Influence of Applicants' Education and Skills on Employability Assessments by Employers. Columbus: The National Center for Research in Vocational Education, The Ohio State University, 1984.

Hollingshead, A. B. Elmtown's Youth and Elmtown Revisited. New York: John Wiley and Sons, 1975.

Jones, Calvin; Knight, Shirley; and Ingels, Steven. "Administrator and Teacher Survey: Final Report." Chicago: University of Chicago, NORC, September 1984.

Kang, Suk. "Time Profile of Youths' Labor Market Outcomes: An Analysis of High School and Beyond Data." In High School Preparation for Employment, pp. 95-141. Columbus: The National Center for Research in Vocational Education, The Ohio State University, 1984.

Kang, Suk, and Bishop, John. "Impact of Curriculum on the Non-College Bound Youths' Labor Market Outcomes." In High School Preparation for Employment, pp. 55-94. Columbus: The National Center for Research in Vocational Education, The Ohio State University, 1984.

Lester, Richard A. Hiring Practices and Labor Competition. Princeton, NJ: Industrial Relations Section, Princeton University, 1954.

Mertens, Donna M., and Gardner, John A. Vocational Education and the Younger Adult Worker. Columbus: The National Center for Research in Vocational Education, The Ohio State University, 1981.

Meyer, Robert H., and Wise, David A. "High School Preparation and Early Labor Force Experience." In The Youth Labor Market Problem: Its Nature, Causes, and Consequences, edited by R. B. Freeman and D. A. Wise, pp. 277-339. Chicago: University of Chicago Press, 1982.

Mortimer, Jeylan T., and Finch, Michael P. "The Effects of Part-Time Work on Adolescent Self-Concept and Achievement." In Becoming A Worker, edited by Kathryn Borman and Jane Reisman. Norwood, NJ: Ablex, forthcoming.

Osterman, Paul. Getting Started: The Youth Labor Market. Cambridge, MA: The MIT Press, 1980.

Rumberger, Russell W., and Daymont, Thomas N. "The Economic Value of Academic and Vocational Training Acquired in High School." Paper presented at the 1982 annual meeting of the American Educational Research Association, New York, March 1982.

Shapiro, David. "Wage differentials Among Black, Hispanic, and White Young Men." Industrial and Labor Relations Review 37 (4) July 1984.

Stephenson, Stanley P. "In-School Labor Force Status and Post-High School Wage Rates of Young Men." Applied Economics 13, 1981.

Treiman, D. J., and Hartman, Heidi, I., eds. Women, Work and Wages: Equal Pay for Equal Value. Washington, DC: National Academy of Sciences, National Research Council, 1981.

Wilms, Wellford W. "The Limited Utility of Vocational Education: California Employers' Views." Public Affairs Report 24 (41) August 1983.

_____. "Vocational Education and Job Success: The Employer's View." Phi Delta Kappa 65, no. 5 (January 1984): 347-350.

Young, Anne McDougall. "Special Labor Force Reports--Summaries." Monthly Labor Review 105. 1982).